



AGENDA
GOVERNANCE AND PRIORITIES COMMITTEE MEETING

Monday, May 13, 2019, 10:00 A.M. - 2:30 P.M.

Board Room, Service and Resource Centre,
411 Dunsmuir Street, Nanaimo, BC

SCHEDULED RECESS AT 12:00 P.M.

Pages

1. CALL TO ORDER:

2. INTRODUCTION OF LATE ITEMS:

3. APPROVAL OF THE AGENDA:

4. ADOPTION OF THE MINUTES:

a. Minutes

3 - 12

Minutes of the Governance and Priorities Committee Meeting held in the Boardroom, Service and Resource Centre, 411 Dunsmuir Street, Nanaimo, BC on Monday, 2019-APR-29 at 9:00 a.m.

5. REPORTS:

a. ENVIRONMENTAL RESPONSIBILITY:

1. Overview of Climate Action and Environmental Management in the City of Nanaimo

13 - 148

To be introduced by Richard Harding, Director, Parks and Recreation.

Purpose: To provide Council with an overview of environmental practices within the City of Nanaimo.

Presentation:

Facilitated by Rob Lawrance, Environmental Planner.

1. Introduction

2. Legislative Framework
3. Environmental Management
4. Storm Water Management

BREAK

5. Operations
 - a. Solid Waste, Recycling and Compost
 - b. Green Fleet
 - c. Drinking Water Resources
 - d. Parks Operations
6. Environmental Stewardship and Community Involvement
7. Climate Change
 - a. Corporate and Community Energy and Emissions Management
 - b. Climate Resiliency Strategy
8. Conclusion

Recommendation: That the Governance and Priorities Committee receive the report titled “Overview of Climate Action and Environmental Management in the City of Nanaimo” dated 2019-MAY-13, and accompanying presentation, for information.

- b. GOVERNANCE AND MANAGEMENT EXCELLENCE:
- c. ECONOMIC HEALTH:
- d. COMMUNITY WELLNESS/LIVABILITY:

6. QUESTION PERIOD:
7. PROCEDURAL MOTION:
8. ADJOURNMENT:

MINUTES
GOVERNANCE AND PRIORITIES COMMITTEE MEETING
BOARD ROOM, SERVICE AND RESOURCE CENTRE
411 DUNSMUIR STREET, NANAIMO, BC
MONDAY, 2019-APR-29, AT 9:00 A.M.

Present: Councillor T. Brown, Chair
Mayor L. Krog
Councillor S. D. Armstrong
Councillor D. Bonner
Councillor B. Geselbracht
Councillor E. Hemmens
Councillor Z. Maartman
Councillor I. W. Thorpe
Councillor J. Turley

Staff: J. Rudolph, Chief Administrative Officer
R. J. Harding, Director, Parks and Recreation (arrived 9:04 a.m.)
D. Lindsay, Director, Community Development
J. Van Horne, Director, Human Resources
L. Mercer, Acting Director, Financial Services (vacated 12:01 p.m.)
B. Sims, Director, Public Works and Engineering
P. Rosen, Senior Manager, Engineering (arrived 11:28 a.m.)
J. Elliot, Senior Manager, Public Works (arrived 11:40 a.m.)
P. Rosen, Senior Manager, Engineering
P. Stewart, Manager, Engineering Projects (arrived 11:43 a.m.)
D. Myles, Manager, Roads & Traffic Services (arrived 11:40 a.m.)
J. Rose, Manager, Transportation (arrived 11:28 a.m.)
A. Fipke, Capital Project Management Specialist (arrived 1:04 p.m.)
F. Farrokhi, Manager, Communications
D. Blackwood, Client Support Specialist (vacated 9:40 a.m.)
S. Gurrie, City Clerk
J. Vanderhoef, Steno (arrived 10:14 a.m., vacated 11:46 a.m.)
G. Whitters, Recording Secretary

1. CALL THE GOVERNANCE AND PRIORITIES COMMITTEE MEETING TO ORDER:

The Governance and Priorities Committee Meeting was called to order at 9:00 a.m.

2. INTRODUCTION OF LATE ITEMS:

(a) Agenda Item 5(a)(1) - Add Report Titled "Strategic Plan Update"

3. ADOPTION OF AGENDA:

It was moved and seconded that the Agenda, as amended, be adopted. The motion carried unanimously.

4. ADOPTION OF MINUTES:

It was moved and seconded that the Minutes of the Governance and Priorities Committee Meeting held in the Boardroom, Service and Resource Centre, Nanaimo, BC on 2019-APR-08 at 12:00 p.m. be adopted as circulated. The motion carried unanimously.

5. REPORTS:

(a) GOVERNANCE AND MANAGEMENT EXCELLENCE:

(1) Strategic Plan 9:00 a.m. - 10:30 a.m.

Introduced by Jake Rudolph, Chief Administrative Officer.

R. Harding entered the Boardroom at 9:04 a.m.

D. Blackwood vacated the Boardroom at 9:05 a.m.

Committee discussion took place regarding the top strategic priorities which included the following information:

- New technology developed to deal with carbon dioxide
- Waterfront walkway and downtown improvements and development
- Housing
- Environment and Environmental Leadership
- Derelict buildings including the A&B Sound and Jean Burns buildings
- Decision making
- Facilities renewal inventory
- Homelessness, mental health and addictions strategy
- Active transportation
- Safe communities
- Public engagement
- Updating the Official Community Plan (OCP)
- Arts and culture
- Economic development strategy
- Infrastructure and asset management
- Food security

The Governance and Priorities Committee meeting recessed at 9:25 a.m.

The Governance and Priorities Committee meeting reconvened at 9:33 a.m.

S. Gurrie returned to the Boardroom at 9:36 a.m.

D. Blackwood returned to the Boardroom at 9:38 a.m.

D. Blackwood vacated the Boardroom at 9:40 a.m.

Committee discussion continued regarding:

- Environmental considerations given to all decisions
- Funding of arts and culture
- Making the Strategic Plan more action oriented
- Making decisions based on regulation and capital expenditure
- Providing public with details of the Strategic Plan
- How to engage with the public and move forward
- Operations is not Council's responsibility
- Decreasing the number of strategic focus areas
- Categorizing Livability and Economic Development under Environment

It was moved and seconded that the Governance and Priorities Committee recommend that Council direct Staff to narrow down the key focus areas of the Strategic Plan from 21 focus areas to approximately 10 focus areas and return to a future Governance and Priorities Committee meeting with the results. The motion carried unanimously.

J. Vanderhoef entered the Boardroom at 10:14 a.m.

Jake Rudolph, Chief Administrative Officer, introduced the new Manager of Communications, Farnaz Farrokhi.

J. Van Horne vacated the Boardroom at 10:18 a.m.

(2) Committees, Boards, Roundtables, and Task Forces 10:30 a.m. - 12:00 p.m.

Introduced by Sheila Gurrie, City Clerk.

Sheila Gurrie, City Clerk, provided a presentation regarding Committees, which included the following information:

- Design Advisory Panel and the Board of Variance are technical and legislated
- Current meetings and engagement processes available to the public
- Committees, task forces, boards and roundtables should fit into the four strategic themes
- Consideration of which engagement process adds the most value to the tasks that Council undertakes
- The momentum of a committee enthusiasm

D. Lindsay vacated the Boardroom at 10:26 a.m.

L. Mercer vacated the Boardroom at 10:30 a.m.

Committee discussion took place regarding:

- Resources and Staff capacity for meetings
- Effectiveness of past Committees
- The purpose of the Governance and Priorities Committee (GPC)
- Community engagement through committees

- Potential committees including the Social Planning Advisory Committee (SPAC), Environmental Committee and Grants Advisory Committee
- Online engagement advancements

D. Lindsay returned to the Boardroom at 10:36 a.m.

- Assigning specific tasks and timelines to task forces
- Clarifying the role of the Finance and Audit Committee
- The purpose of the Grants Advisory Committee
- Keeping all fiscal decisions at Finance and Audit Committee meetings
- Changing Finance and Audit Committee name to Finance Committee
- The concept of the “Intersectional Committee” and creating a terms of reference that includes all voices
- Public calendar for upcoming GPCs
- Quarterly roundtables or Committee of the Whole meetings

L. Mercer returned to the Boardroom at 11:00 a.m.

- Creation of an Arts and Culture Task Force that meets quarterly
- Community Engagement Task Force
- Committees born out of task forces
- Challenges with chairing meetings
- Potential Task Forces including Official Community Plan, Economic Development and Active Transportation
- Success of the Cannabis Task Force and the Transportation Masterplan Task Force
- Grants Advisory Committee allowing for a more robust discussion of subjective Permissive Tax Exemptions
- Creating a task force to identify focus areas

J. Rose and P. Rosen entered the Boardroom at 11:28 a.m.

It was moved and seconded that the Governance and Priorities Committee recommend that Council direct Staff to strike an Environmental Committee with the Terms of Reference to be determined after the 2019-MAY-13 Governance and Priorities Committee Meeting. The motion carried unanimously.

Committee discussion continued regarding:

- Potential legal implications of the Intersectional Advisory Board
- Location of meetings
- Engage with all members of the community
- Recruitment of members for the committees

It was moved and seconded that the Governance and Priorities Committee recommend that Council direct Staff to strike an Intersectional Advisory Board and create the Terms of Reference.

It was moved and seconded that the following motion be deferred to a future Governance and Priorities Committee Meeting:

“It was moved and seconded that the Governance and Priorities Committee recommend that Council direct Staff to strike an Intersectional Advisory Board and create the Terms of Reference.”

The motion carried unanimously.

J. Elliot and D. Myles entered the Boardroom at 11:40 a.m.
P. Stewart entered the Boardroom at 11:43

It was moved and seconded that the Governance and Priorities Committee recommend that Council direct Staff to provide a report on the grants approval process. The motion carried unanimously.

J. Vanderhoef vacated the Boardroom at 11:46 a.m.
F. Farrokhi and S. Gurrie vacated the Boardroom at 11:49 a.m.

By unanimous consent, the Governance and Priorities Committee began the presentation regarding Transportation in Nanaimo.

(b) COMMUNITY WELLNESS/LIVABILITY:

(1) Transportation in Nanaimo 1:00 p.m. - 3:30 p.m.

Introduced by Bill Sims, Director, Engineering and Public Works.

F. Farrokhi entered the Boardroom at 11:54 a.m.

Poul Rosen, Senior Manager, Engineering, and Jamie Rose, Manager, Transportation, provided a presentation regarding transportation in Nanaimo, which included the following information:

- Authority and legislation that governs transportation in the City of Nanaimo
- Demographics of Nanaimo
- The functional Road Classification Plan
- Aiming to keep traffic on major roads
- Truck routes

S. Gurrie returned to the boardroom at 11:56 a.m.

- Transportation asset value and amount invested in asphalt
- Development and system fragmentation

(c) PROCEDURAL MOTION:

It was moved and seconded that the meeting be closed to the public in order to deal with agenda items under the *Community Charter* Section 90(1):

- (a) personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality; and,
- (c) labour relations or other employee relations.

The motion carried unanimously.

The Governance and Priorities Committee Meeting moved “In Camera” at 12:01 p.m.
The Governance and Priorities Committee Meeting moved out of “In Camera” at 1:04 p.m.

Staff present: J. Elliot, A. Fipke, S. Gurrie, D. Lindsay, D. Myles, J. Rose, P. Rosen, J. Rudolph, B. Sims, P. Stewart, J. Van Horne and G. Whitters.

(1) Transportation in Nanaimo 1:00 p.m. - 3:30 p.m. (continued)

Poul Rosen, Senior Manager, Engineering, and Jamie Rose, Manager, Transportation, continued the presentation regarding transportation which included the following information:

- Responsibilities of the Planning, Engineering and Public Works departments
- Historical approach has been to build bigger roads and current approach is planning for growth
- Providing sustainable options for commuting
- The Transportation Masterplan
- The long and short-term infrastructure goals
- Changing targets and the possibility of reaching more aggressive environmental goals
- Future major road improvement projects
- Long Term Cycling Network (bike highway)
- Complete Streets

R. Harding returned to the Boardroom at 1:33 p.m.
J. Rudolph vacated the Boardroom at 1:38 p.m.

Committee discussion took place regarding:

- Layout and space required for bike lanes and considerations for e-bikes
- Bike lanes on Bowen Road
- Encouraging walking with better infrastructure and neighbourhood design
- Including the cost of maintenance into plans

D. Lindsay vacated the boardroom at 1:42 p.m.

Daniel Pearce, Director, Transportation and Emergency Services, Regional District of Nanaimo, provided a presentation regarding transportation, which included the following information:

- Transit exchanges and future plans for exchanges
- Rapid bus route is using Highway 19A
- Partnership between Regional District of Nanaimo and Ministry of Transportation and Infrastructure working on two bus pull offs on Highway 19A
- BC Transit has a 3 year budget process
- Continuously building transit
- Transit Signal Priority and cue jumper lane as accommodations for people walking and biking
- Strategies to encourage ridership
- Fare box technology
- The number of riders that the system could accommodate

J. Rudolph entered the boardroom at 1:56 p.m.

Committee discussion took place regarding:

- Days that the buses don't operate
- Crowding of buses during pickup

B. Sims vacated the Boardroom at 2:09 p.m.

F. Farrokhi entered the Boardroom at 2:11 p.m.

Poul Rosen, Senior Manager, Engineering, and Jamie Rose, Manager, Transportation, continued the presentation regarding transportation which included the following information:

- Top transportation calls from the public
- Transportation safety through engineering, education and enforcement
- Traffic calming
- Education and enforcement through events such as Bike to Work Week, Active & Safe Routes to School program and Pedestrian Safety Day

D. Lindsay returned to the Boardroom at 2:17 p.m.

J. Van Horne returned to the Boardroom at 2:25 p.m.

- Area Parking Plans
- Summary of violations and number of serious and fatal crashes
- 2018/2019 School Year Enforcement
- Maintenance of roads bridges, signals, sidewalks, signs and lines

The Governance and Priorities Committee Meeting recessed at 2:34 p.m.

The Governance and Priorities Committee Meeting reconvened at 2:41 p.m.

Staff Present: J. Elliot, A. Fipke, R. Harding, D. Lindsay, D. Myles, J. Rose, P. Rosen, J. Rudolph, B. Sims, and G. Whitters.

Poul Rosen, Senior Manager, Engineering, and Jamie Rose, Manager, Transportation, continued the presentation regarding transportation which included the following information:

- The asset management cycle
- Remaining service life of infrastructure
- Asphalt condition assessment conducted in 2017
- Pavement quality index of 79; dropped in 2017 to 75
- Asset deterioration curve
- Rehab of roads before repairs become too costly

S. Gurrie returned to the boardroom at 2:43 p.m.

J. Van Horne returned to the Boardroom at 2:45 p.m.

Committee discussion took place regarding:

- Different types of asphalt
- Asphalt currently made from bitumen and plans to switch to other sources
- Currently repurposing existing materials
- Database collection of quality of roads

The presentation continued regarding:

- Budget for road rehab
- Levels of service provided by Public Works and Engineering
- Public Works currently runs two large sweepers and one sidewalk sweeper
- Sweeping priorities for cyclist lanes
- Historic and projected transportation infrastructure spending

Committee discussion took place regarding:

- Increasing active transportation funding
- Staff capacity to deliver projects
- Project carry forwards

The presentation continued regarding:

- The cost for upgrades at the E&N Rail crossways are expensive
- Extension of the E&N Trail South

S. Gurrie vacated the boardroom at 3:17 p.m.

- Capital project types include: condition deficiency, growth, capacity efficiency, strategic, operational deficiency and when the opportunity presents itself

- Current projects include: Bastion Street Seismic Upgrade, Port Drive/Wellcox Access, Wakesiah Corridor – Phase 1, Metral Drive Corridor, Stewart Avenue Complete Street, Boxwood Connector, Off Bowen Bike Route and the Downtown Mobility Project
- Opportunities: Downtown cycling loop, Parking Management Strategy, redevelopment potential and the Albert Street bike route
- Future projects include: Cranberry connector planned for 2023, LED Conversions, Traffic Signal Management System, Wellcox Secondary Access, Norwell Road, Townsite Bike lanes, fifth street, various sidewalks and bike lane infill projects and annual pedestrian unallocated funding

S. Gurrie returned to the boardroom at 3:28 p.m.

- Getting feedback from the public for Complete Streets and incorporating it into the street standards bylaw
- The future of transportation
- Future Studies: Active and sustainable transportation, transit integration, mobility HUB plan and area parking strategy
- Potential Future Actions include: road rehab, transportation level of service, develop a vision zero toolkit 2022 and update transportation master plan
- Council actions and considerations include: Funding levels, policy, and prioritization

It was moved and seconded the report titled “Transportation in Nanaimo” dated 2019-APR-29, be received for information. The motion carried unanimously.

(d) ECONOMIC HEALTH:

(1) Project Management Framework and Policy 3:30 p.m. - 4:00 p.m.

Introduced by Poul Rosen, Senior Manager, Engineering.

Poul Rosen, Director, Senior Manager, Engineering, provided a presentation regarding the Project Management Framework and Policy which included the following information:

- Undertaking to be consistent with City policy, best practices and follows the recommendations from the Deloitte report
- The key chapters in the Project Management Framework
- How to determine a significant project from a routine project

F. Farrokhi returned to the boardroom at 3:44 p.m.

- The policy ensures that Staff follow the procedure of the Project Management Framework
- The Project Management Framework provides confidence for public

Committee discussion took place regarding:

- Public access to the policy
- The framework is a living document
- Provides consistency on the delivery of projects
- If the cost of maintenance is included in Project Management Framework

It was moved and seconded that the Governance and Priorities Committee recommend that Council adopt the Capital Project Management Policy 11-5210-01. The motion carried unanimously.

6. QUESTION PERIOD:

No one in attendance wished to ask questions.

7. ADJOURNMENT:

It was moved and seconded at 3:54 p.m. that the meeting terminate. The motion carried unanimously.

CHAIR

CERTIFIED CORRECT:

CORPORATE OFFICER

DATE OF MEETING | MAY 13, 2019 |

AUTHORED BY | ROB LAWRENCE, ENVIRONMENTAL PLANNER
COMMUNITY DEVELOPMENT |

SUBJECT | **OVERVIEW OF CLIMATE ACTION AND ENVIRONMENTAL
MANAGEMENT IN THE CITY OF NANAIMO** |

OVERVIEW

Purpose of Report

To provide Council with an overview of environmental practices within the City of Nanaimo.

Recommendation

That the Governance and Priorities Committee receive the report titled “Overview of Climate Action and Environmental Management in the City of Nanaimo” dated 2019-MAY-13, and accompanying presentation, for information.

DISCUSSION

At the Council Meeting held 2019-APR-29, Council passed a motion officially declaring a climate emergency “for the purposes of identifying and deepening our commitment to protecting our economy, our ecosystems, and our community from Global Warming.” Declaring a climate emergency will support the community and the organization to redouble efforts and remain focussed on building a resilient community. At that same meeting, Council initiated four actions in support of this motion that include:

- Moving funds from the Regional Emissions Reduction Reserve to a new reserve fund for the purpose of supporting projects, plans and initiatives that reduce the City of Nanaimo’s community wide CO2 emissions;
- Updating the City’s Community Sustainability Action Plan to reflect the target goals identified in the latest Intergovernmental Panel on Climate Change report;
- Requesting the Regional District of Nanaimo (RDN) add an additional 20,000 annual public transit hours; and,
- Requesting the Provincial government reinstate the production of the Community Energy and Emissions Inventory Reports.

Environmental management practices are employed across the organization in multiple functions across several departments.

There are several programs underway incorporating environmental policies addressing several different areas. Some of these areas include:

- solid waste and recycling;
- water conservation;
- rainwater management;
- transportation;
- building and vehicle energy efficiency;
- urban forestry;
- environmental bylaw compliance;
- environmental and climate action policy developments; and,
- ecological restoration and stewardship.

Staff engage with a broad spectrum of projects, often in partnership with other governments, community groups, and consultants.

Community involvement to promote environmental stewardship is through rebate programs and community programming. Volunteers work on the City's parkland to control the spread of invasive species and improve the protection of sensitive ecosystems. Other community supports the City provides include the Declaration of Climate Emergency which will elevate Staff's focus on projects and initiatives related to environmental policies.

CLIMATE ACTION

The City's efforts on Climate Action has been multi-faceted. Corporately, the City has focussed on improving energy efficiency of its buildings and infrastructure and in greening the City vehicle fleet. On the community side, focus has been on improvements to transportation and mobility choice throughout the City. Ongoing education and financial incentives have been available to encourage more home energy efficiency retrofits, since 2012.

The attached presentation (Attachment A) is intended to provide an overview of current Climate Action and Environmental Management policies and processes in the City of Nanaimo in order to provide the Committee with an opportunity to further its understanding of the roles and responsibilities of these functions. |

SUMMARY POINTS

- Implementation of the City of Nanaimo's environmental policies and programs is being done across the organization.
- Environmental measures cover elements such as solid waste and recycling; water conservation; rainwater management; transportation; building and vehicle energy efficiency; urban forestry; and ecological restoration and stewardship.
- Community stewardship is an important element of implementing the environmental management practices.
- Council's declaration of a climate emergency lends additional impetus to existing and future efforts in building a resilient community. |

ATTACHMENTS

ATTACHMENT A: Overview of Climate Action and Environmental Management in the City of Nanaimo presentation |

Submitted by:

Rob Lawrance
Environmental Planner |

Concurrence by:

Dale Lindsay
Director, Community Development |

Concurrence by:

Richard Harding
Director, Parks and Recreation |

Concurrence by:

Bill Sims
Director, Public Works |

Overview of Climate Action & Environmental Management in the City of Nanaimo



Overview of Session

- Legislative Framework
- Environmental Management
- Storm Water Management

BREAK

- Operations
- Environmental Stewardship & Community Involvement
- Climate Change
- Conclusion



Legislative Framework

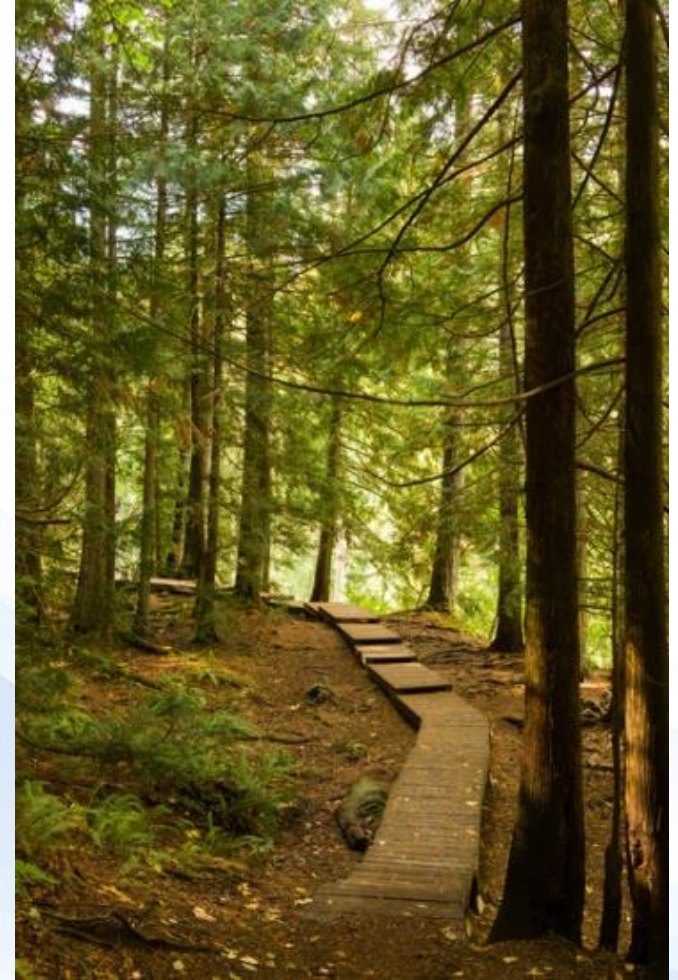
Federal & Provincial Legislation

Federal Legislation

- Fisheries Act
- Species at Risk Act

Provincial Legislation

- Wildlife Act
- Riparian Areas Regulation Act
- Water Sustainability Act
- Contaminated Site Regulation



Legislative Framework

Plans / Bylaws / Policies

Regional District

- Regional Growth Strategy

City of Nanaimo

- Strategic Plan
- Official Community Plan
- Water Conservation Strategy
- Water Supply Strategic Plan
- Parks Master Plan
- Transportation Master Plan
- Neighbourhood Plans



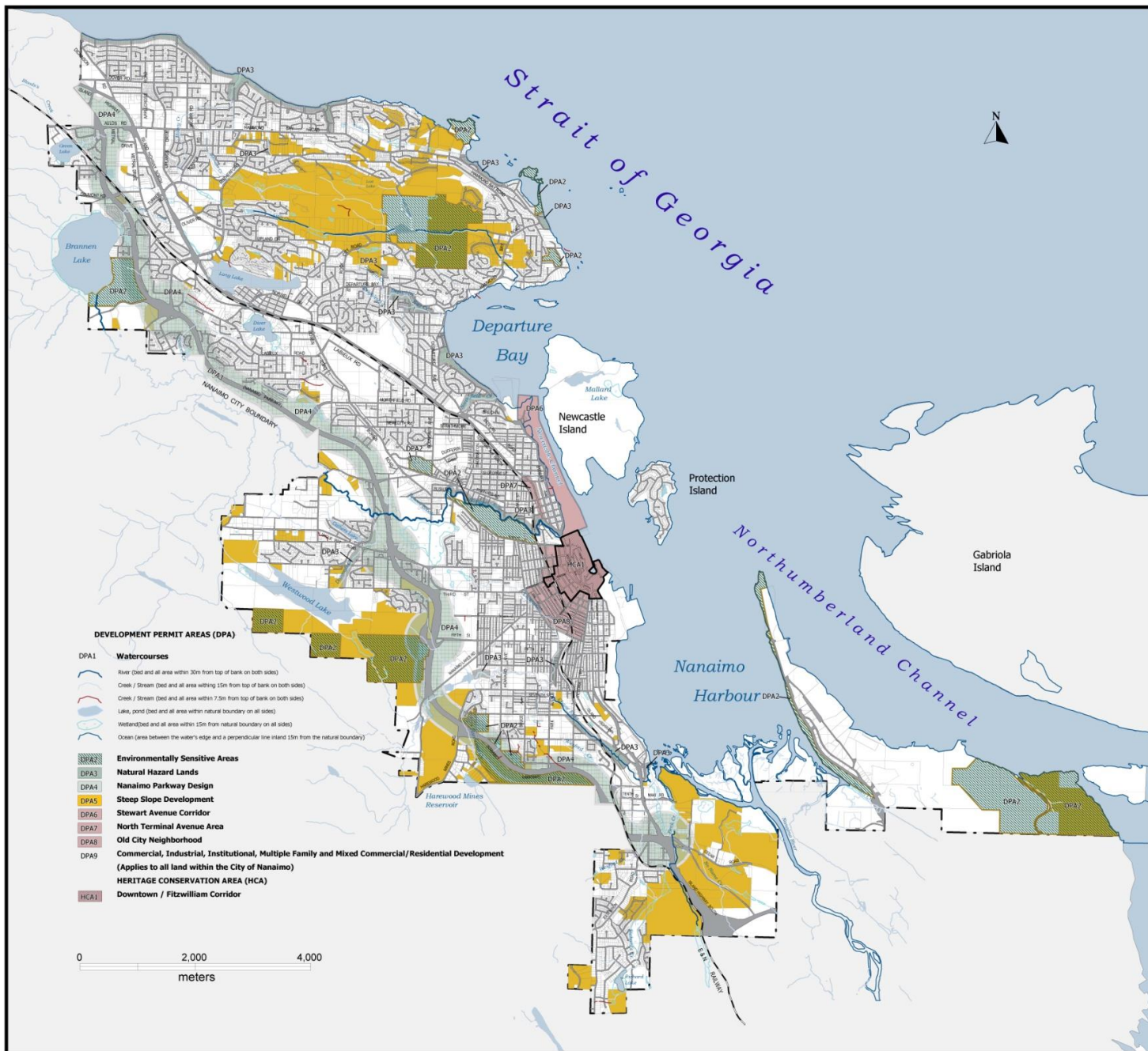
Bylaws

- Zoning Bylaw 4500
- Tree Management and Protection Bylaw No. 7126
- Pesticide Use Bylaw No. 7102
- Regional Emissions Reduction Reserve Fund Bylaw No. 7184
- Soil Removal and Depositing Bylaw 1976 No. 1747

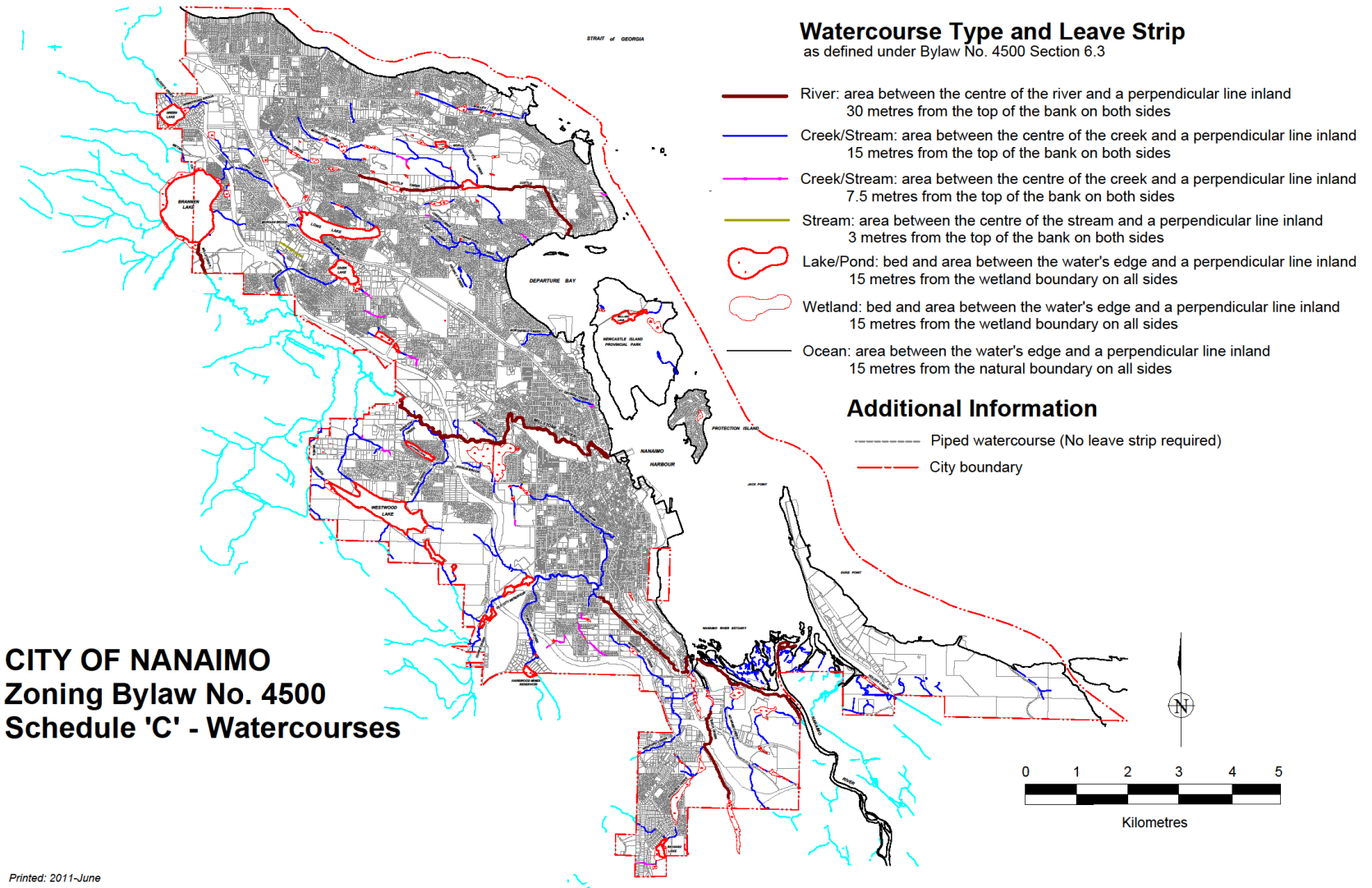
Council Policy

- Energy Conservation and Management Policy
- Purchasing Policy
- Green Building Strategy
- Anti-Idling Policy





CITY OF NANAIMO
Zoning Bylaw No. 4500
Schedule 'C' - Watercourses



Environmental Management

Marine Foreshore

- 15 m from natural boundary of the ocean



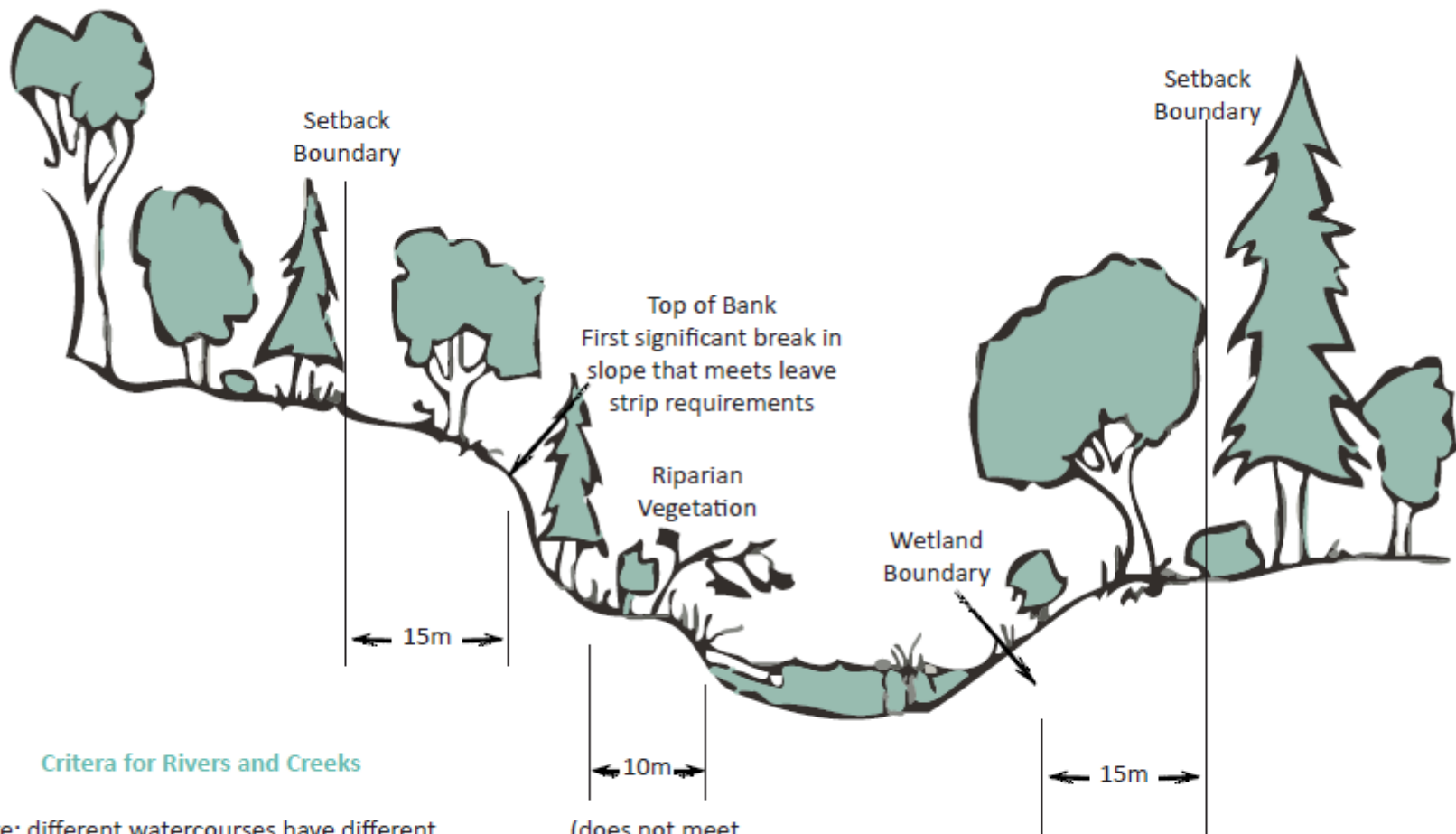
Environmental Management

Watercourses

Zoning Bylaw 4500 – Watercourses – Schedule C

- 15m or 30m setback from top of bank of a stream
- 15m setback from wetland boundary of a lake or wetland
- Variances through DPA





Criteria for Rivers and Creeks

Note: different watercourses have different setback requirements. These examples use 15 metres. Check with City Planning staff for specific setback.

Criteria for Lakes, Ponds and Wetlands

Environmental Management

Riparian Areas Regulation (RAR)

- Provincial regulation from the Riparian Area Protection Act
- For the protection of fish and fish habitat only
- Streamside Protection and Enhancement Area (SPEA) measured from high water mark
- SPEA is the minimum protection to avoid HADD under Fisheries Act



Legend

- 15 m Coast DPA
- Approximate 10 m SPEA setback
- Approximate C.O.N. 15 m watercourse setback
- Approximate Walley Creek centreline
- Property boundary
- Approximate developable area

Google Earth

Image © 2019 Nanaimo



50 m



Environmental Management

Zoning Bylaw No. 4000

- City of Nanaimo Zoning Bylaw 4000 in place since 1996
- City of Nanaimo watercourse setbacks meet or exceed RAR requirements
- RAR triggered when variance to watercourse setbacks is requested
- RAR does not consider wildlife habitat
- Local Government has the discretion to have more stringent protection requirements than RAR



Environmental Management

Environmentally Sensitive DPA

- Non-fish bearing watercourses and wetlands
- Terrestrial herbaceous
- Older forest
- SARA (critical habitat protection) and Red/Yellow listed species



Environmental Management

Environmentally Sensitive DPA

Process

- Development application
- Request environmental assessment be completed by Qualified Environmental Professional (RPBio)
- Assessment review by staff
- ESA protection through DP conditions



Environmental Management

Dense Spiked Primrose



- COSEWIC listed species – Endangered
- Red listed in BC
- Found through assessment
- Protected through subdivision process and DP conditions



Canada Goose Management

- Canada geese introduced to Vancouver Island in the 1960s
- Resident and migratory populations
- Why?
- Fouling of playing fields and beaches
- Human / wildlife conflicts



Canada Goose Management

- Abundance, Distribution and Movement Study being completed in 2019
- 400 geese collared – 200 in 2016 and 200 in 2017
- Monthly counts of geese
- Population varies seasonally
- 48 % resident geese
- Significant influx of geese from August to December
- Lowest population count at molt late June early July



Environmental Management

Feral Rabbit Management

- No native rabbits on Vancouver Island
- European rabbits are introduced invasive species
- Why?
- Infrastructure damage
- User injury liability
- Ecosystem damage



When Nature Controls Over Population

- Rabbit hemorrhagic disease – Feb 2018
 - Highly contagious virus RHDV-calicivirus
 - Only affects European rabbits
 - Mortality with 48 -72 hrs
- 80%-90% mortality



Environmental Management

Feral Rabbit Management



Population Maintenance

- Raptor perch poles
- Potential changes to the Animal Control Bylaw
 - Increased fines for feeding
 - Increased fines for release
 - Pet rabbits must be spay or neutered before sale
 - Pet rabbit licensing
- Public education



Environment Management

Beaver Management



Environment Management

Beaver Management

Positives

- Stabilize watersheds as keystone species
 - Create habitat
 - Increase biodiversity
 - Healthy wetlands



Environment Management

Beaver Management

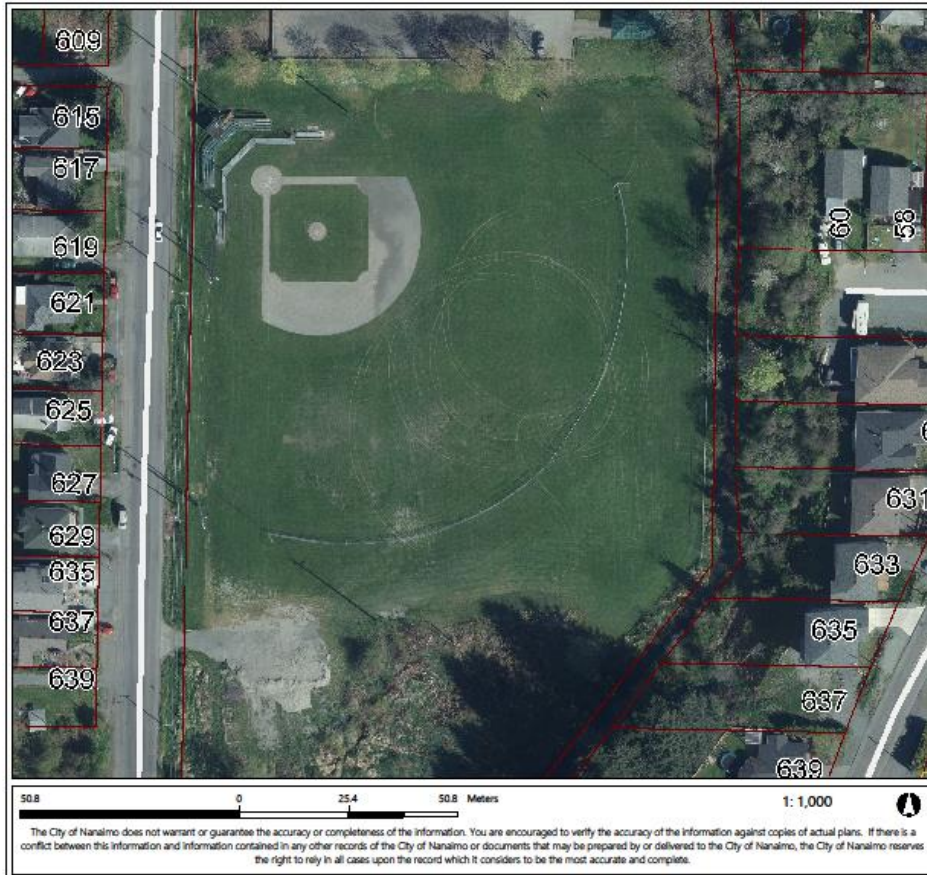
Why?

- Flooding of private and public land
- Infrastructure damage (storm system and sports fields)
- Tree removal and tree flooding causing potential hazards



Environment Management

Beaver Management



Robins Park



Environment Management

Beaver Management

Balanced Approach

- Leave them be
- Wire trees
- Beaver baffles and pipes
- Regular removal of dams
- Last resort: Removal (trapping)
 - No relocation



Compliance and Enforcement

- Receive complaint
- Investigate complaint
- Review findings with management
- Take appropriate action



What is an Urban Forest?

- “The networks or systems comprising all woodlands, groups of trees, and individual trees located in urban and peri-urban areas” (Food and Agriculture Organization)
- **Urban Forestry** or **Municipal Arboriculture** deals with the management of planted and naturally occurring greenspace on public and private land. This includes planning, planting, establishing, protecting and managing all trees and associated vegetation.

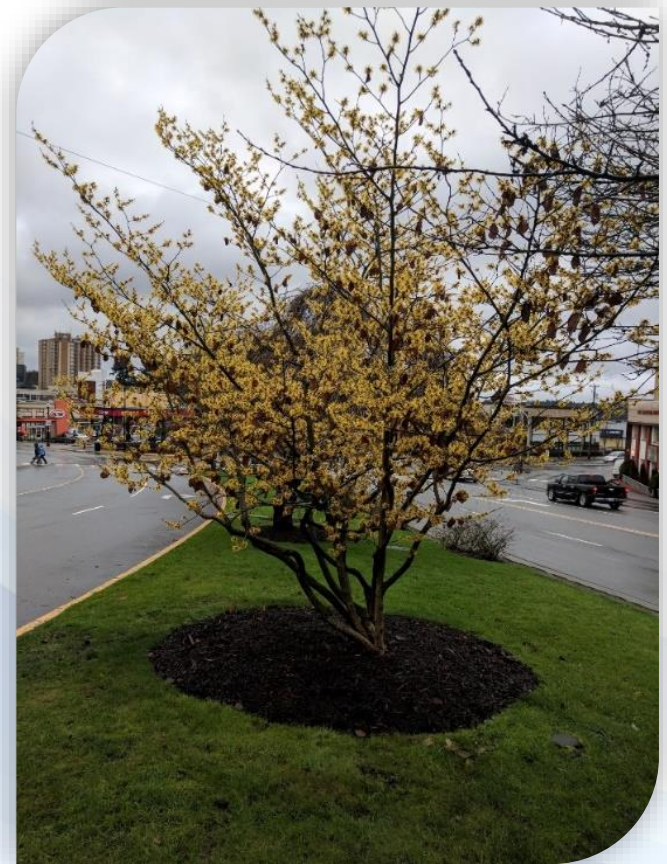


Environment Management

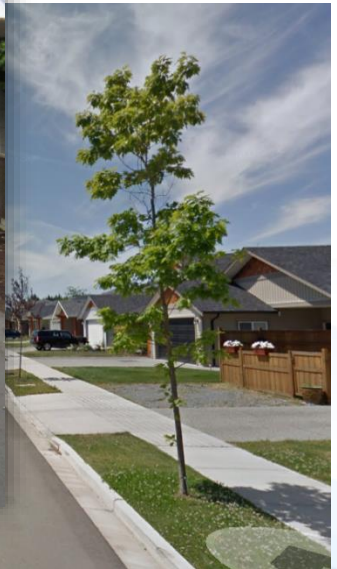
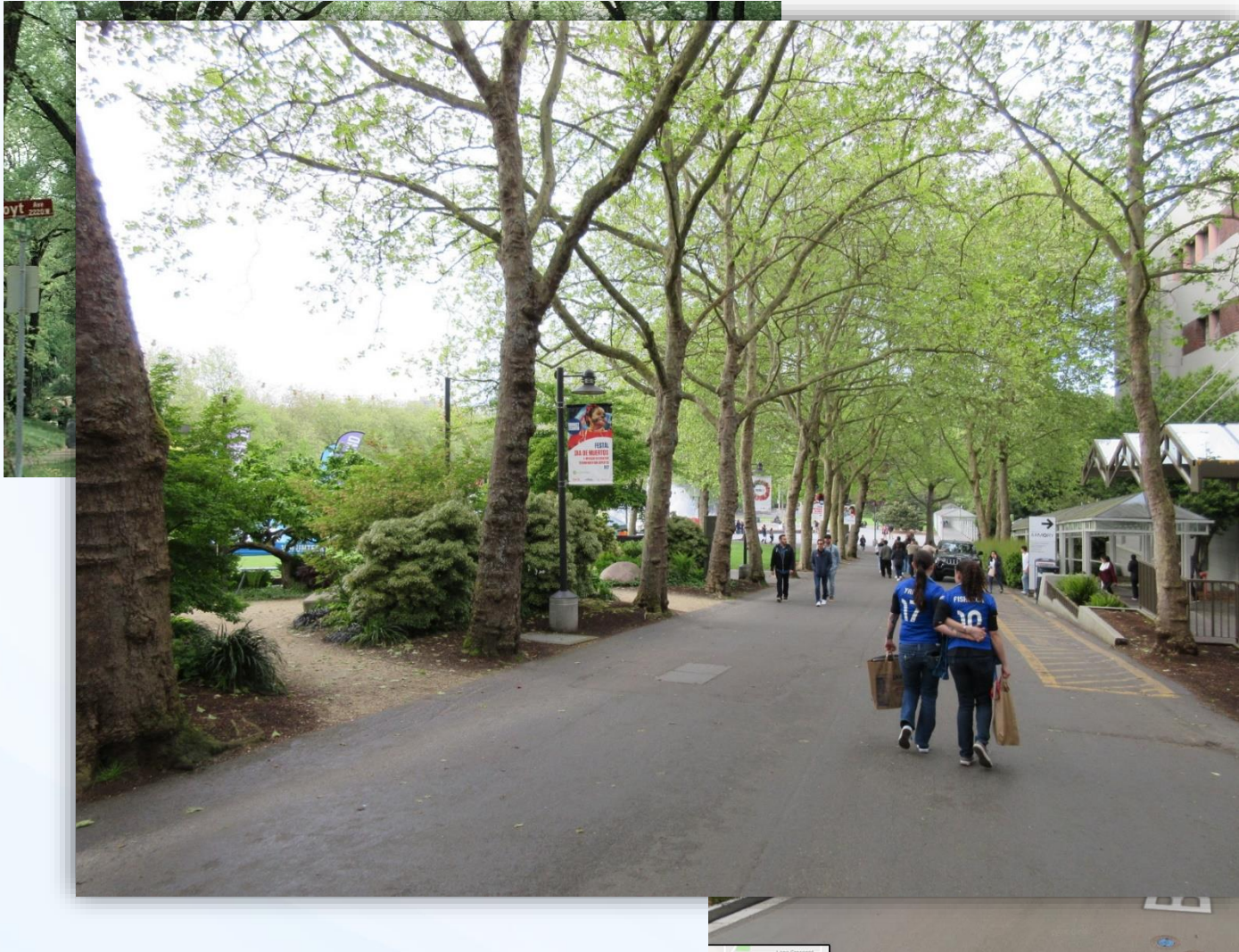
Urban Forestry

Benefits of a well-functioning Urban Forest

- Environmental
 - Sequester Carbon
 - Mitigate Flooding
 - Improve water quality
- Social
 - Create sense of place
 - Mental and Physical Health
 - Food Security
- Economic
 - Natural Asset
 - Extends life of Infrastructure
 - Reduce heating and cooling costs



Environment Management



Environment Management

Urban Forestry



The bad news....

Across North America development in urban areas is causing general environmental decline.

US Forest Service estimates that in the USA alone, 36 million urban trees are lost every year.

Nanaimo is no exception.



Environment Management

Urban Forestry



The good news!

It is possible to grow or enhance the urban forest.

Some municipalities are starting to turn the tide and increase tree canopy coverage, resulting in an increase of all the associated benefits.



Environment Management

Urban Forestry

Current Projects and Programs

RonKirk
Photography

Urban Forestry



TREE

This voucher may be exchanged for

to

Authorized by Patrick McIntosh, Urban Forestry

Expires: 2018-MAR-25

Number:

Max 2 per property. Must be used by 03/25/2018.



\$20 TREE VOUCHERS

(UP TO \$75 VALUE)

Nanaimo wants your help in increasing forest canopy. Nanaimo residents can receive a **\$20 tree voucher** here and use it for a fruit or coniferous tree at Green Thumb Garden Centre.



PROGRAM DETAILS

- There will be 400 vouchers available for Nanaimo residents or property owners to use for the purchase of a tree for \$20 each (cash only)
- No more than 2 vouchers issued per property per year
- All sales are final
- Redemption value not to exceed \$75
- Vouchers expire on December 16, 2018

Save the World!



1300 Vouchers
Funded by motor vehicle
fines, permits and

CITY OF NANAIMO

Green Thumb
GARDEN CENTRE



Beaufort Food Forest

- Planted in December 2017.
- Collaboration between the City, Neighborhood, MYCDC, and BC Hydro Greening Grant.
- 59 fruit and nut trees and many edible shrubs.
- Watering done by City Park staff and volunteers.
- Will serve to provide, food security, forest cover, educational opportunities, sense of community, wildlife habitat, recreation.

BEAUFORT PARK FOOD FOREST

These gardens were designed to demonstrate edible landscaping in the City.

A **Food Forest** is intended to mimic a natural forest ecosystem with plants chosen and located around the trees in a way that helps support and sustain them. Many of the plants you will see are chosen to act as pollinator attractors, nutrient accumulators and soil stabilizers.

- Be gentle when picking fruit
- Be respectful of all users in this space
- During summer months, help us keep our "gator" bags filled with water

We welcome everyone to enjoy this space and to enjoy the food it provides.

Interested in helping out at the Beaufort Forest? Contact us!

Beaufort Food Forest Tree List

APPLES: Originating in Kazakhstan, apples arrived in Europe by way of the Middle East, and arrived in Canada with the French explorer Samuel de Champlain. They were planted throughout the country by the pioneers who ate them raw, cooked and baked with them, dried them for winter food and processed them into cider.



CHERRIES: From Europe, Western Asia and parts of Northern Africa, cherries are classified as stone fruits (fruits containing a singular central seed), alongside apricots, plums, peaches and almonds.



PEARS: The pear is native to coastal and mildly temperate regions of Western Europe, North Africa and Asia. The tree typically reaches heights of 10-17 metres (33-56 ft). Because of its versatility and long storage life, pears were a valuable commodity in the ancient world.



PLUMS: Plums may have been one of the first fruits domesticated by humans. Three of the most common varieties are only found around human settlement.



OTHER TREES: Look at the map at the back of this kiosk to see other trees that are growing in this food forest, including quince, mulberry, almond, hazelnut and walnut.



www.nanaimo.ca • 250-756-5200 • parksandrecreation@nanaimo.ca



Urban Forestry

Shaw

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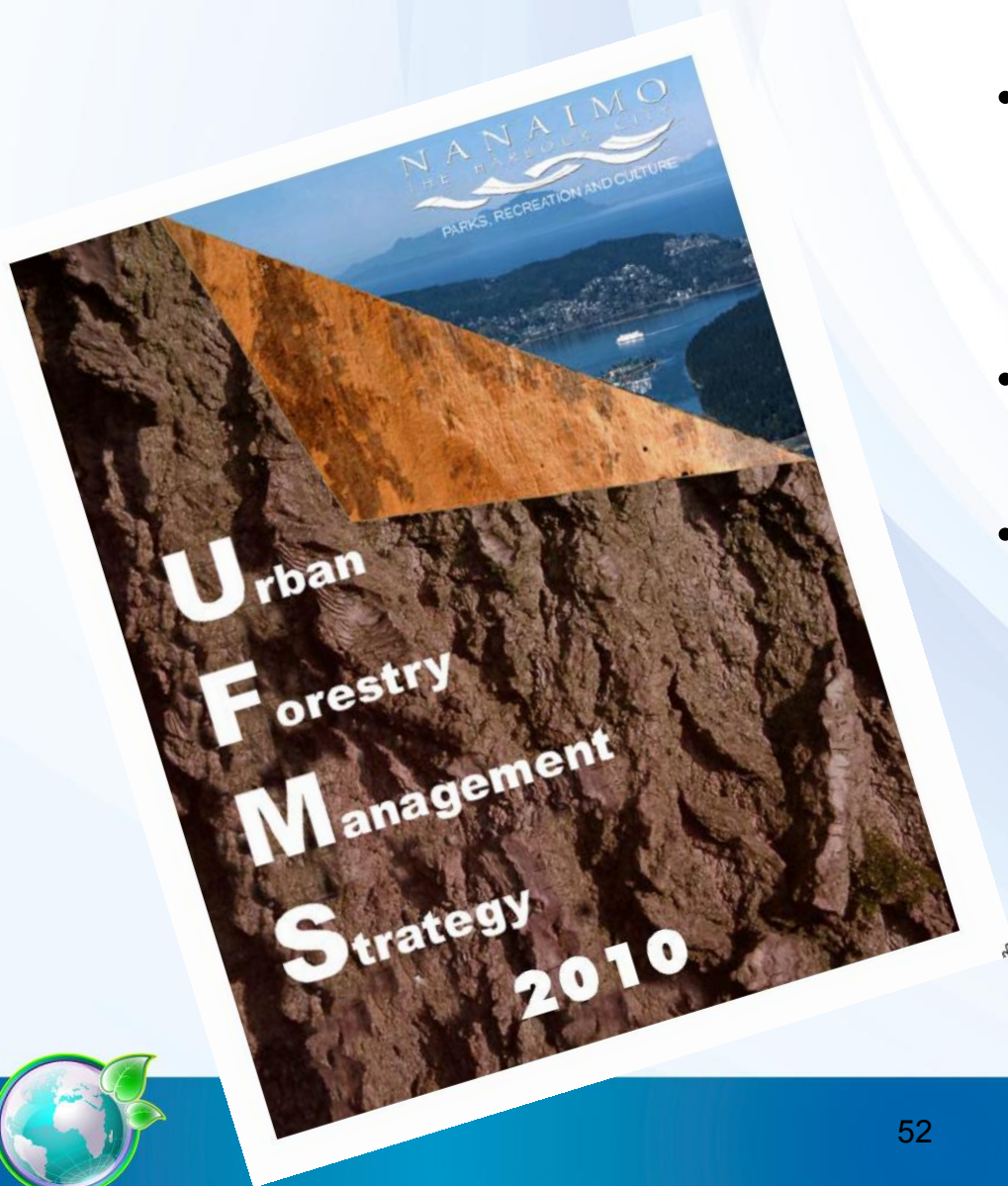
Urban Forestry

A photograph of a paved path lined with vibrant pink cherry blossom trees. The trees are in full bloom, creating a dense canopy of pink flowers over the path. The path is wet, reflecting the light. The background shows more greenery and a glimpse of a blue sky.

**Where are we at and
Where do we want to go?**

Environment Management

Urban Forestry



- Developed to fulfill the need for better forest, vegetation and ecosystem management throughout the City.
- Identified the need for a new tree bylaw
- Established a goal of increasing tree canopy coverage by 4% over ten years



Urban Forestry

Bylaw No. 7126 Management & Protection of Trees within the City of Nanaimo



- Adopted in 2013
- A home owner is allowed to **remove up to 4** non “protected” trees in a calendar year without a permit.
- If a permit is required, replacement trees must be replanted.
- If a parcel of land being developed is **over 0.5ha in size, 20% of the trees onsite** must be retained.

It takes many years for a tree planted today to provide the same environmental benefits as retaining a mature tree.



Urban Forestry



Looking Forward

Environment Management

Urban Forestry

Baseline data collection

A clear understanding of what we have is needed to plan, set goals and monitor our progress.

The most important data we need to collect is:

An accurate Canopy Cover Assessment.

A comprehensive public tree inventory.

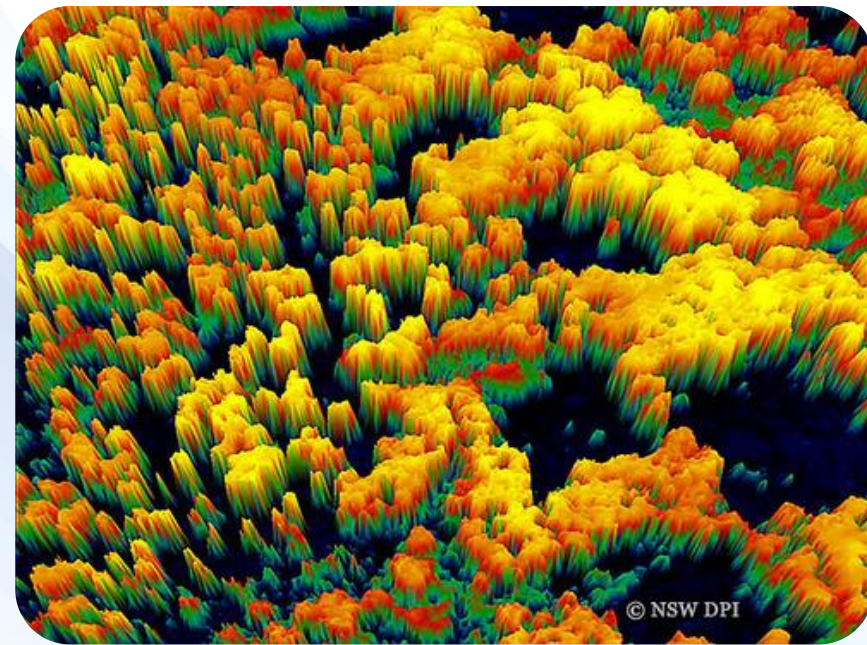


Environment Management

Urban Forestry

Canopy Cover Assessment

- A 2006 Malaspina University/College (now Vancouver Island University) aerial photo canopy study
- The 2010 Urban Forest Management Strategy identifies a goal of increasing the canopy coverage by 4% over ten years.
- We need to invest in an updated canopy survey to set a new benchmark to measure progress.
- It is important that the results are repeatable to give us accurate information on our progress.



© NSW DPI

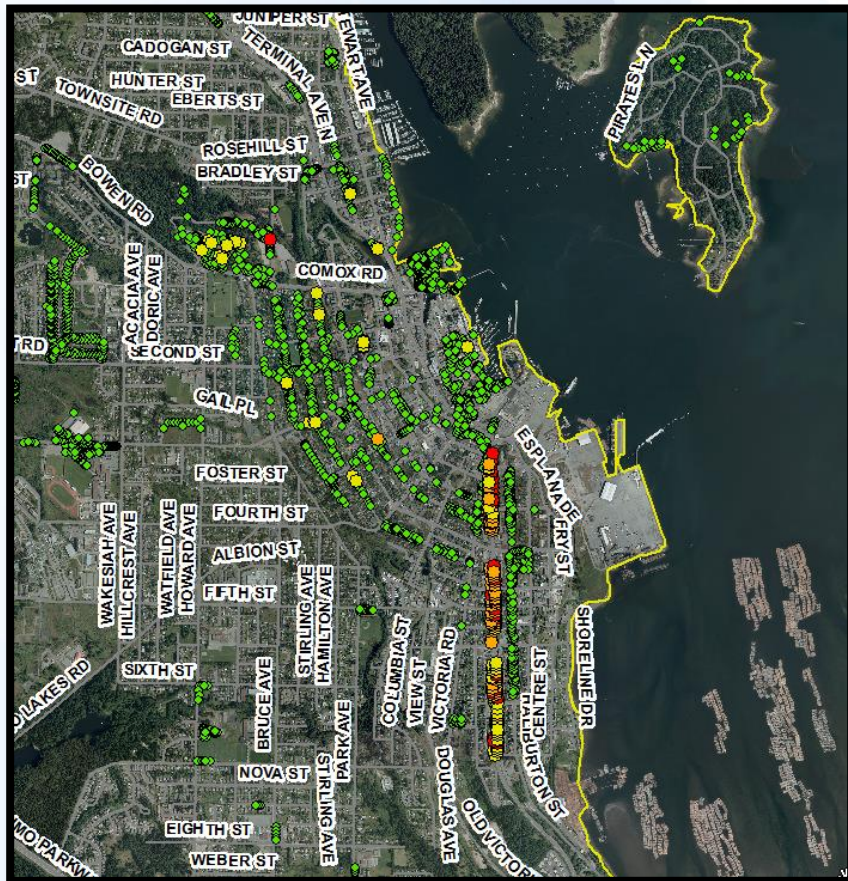
© NSW DPI



Environment Management

Urban Forestry

Street Tree Inventory



- Geo Spatially linked data set.
- Important attributes to collect:
Tree Species, Size, Condition, Age (planting date), Maintenance history.
- Most practically limited to formally managed trees...For now.
- Goal is to have **inventory linked to inspection cycles** and a work management/scheduling system.



Environment Management

Urban Forestry

Amending the Tree Protection and Management Bylaw

- Improve bylaw requirements for trees being retained during construction.
- Additional requirements will increase staff workloads to process permits, conduct inspections, consultations, and provide bylaw compliance
- This could result in future requests for additional staff.



Environment Management

Urban Forestry

Improving Tree Management Practice

- Get planting!
- Canopy Study will identify areas in need reforestation. Increasing our tree planting capacity will require creative tree planting programs and the capacity to plant, monitor and maintain trees in public and private areas.
- Switch from a policy of reactive tree maintenance to proactive. Implementing a scheduled work management system.
- Regularly re-evaluate our progress from our baseline data and update our goals to address our needs.
- Achieving this will require an increase in staffing levels



Environment Management

Urban Forestry

Nanaimo should lead not follow, we can be the community others on the Island look to as their guiding example in policy and practice.



Environment Management

Stormwater Management

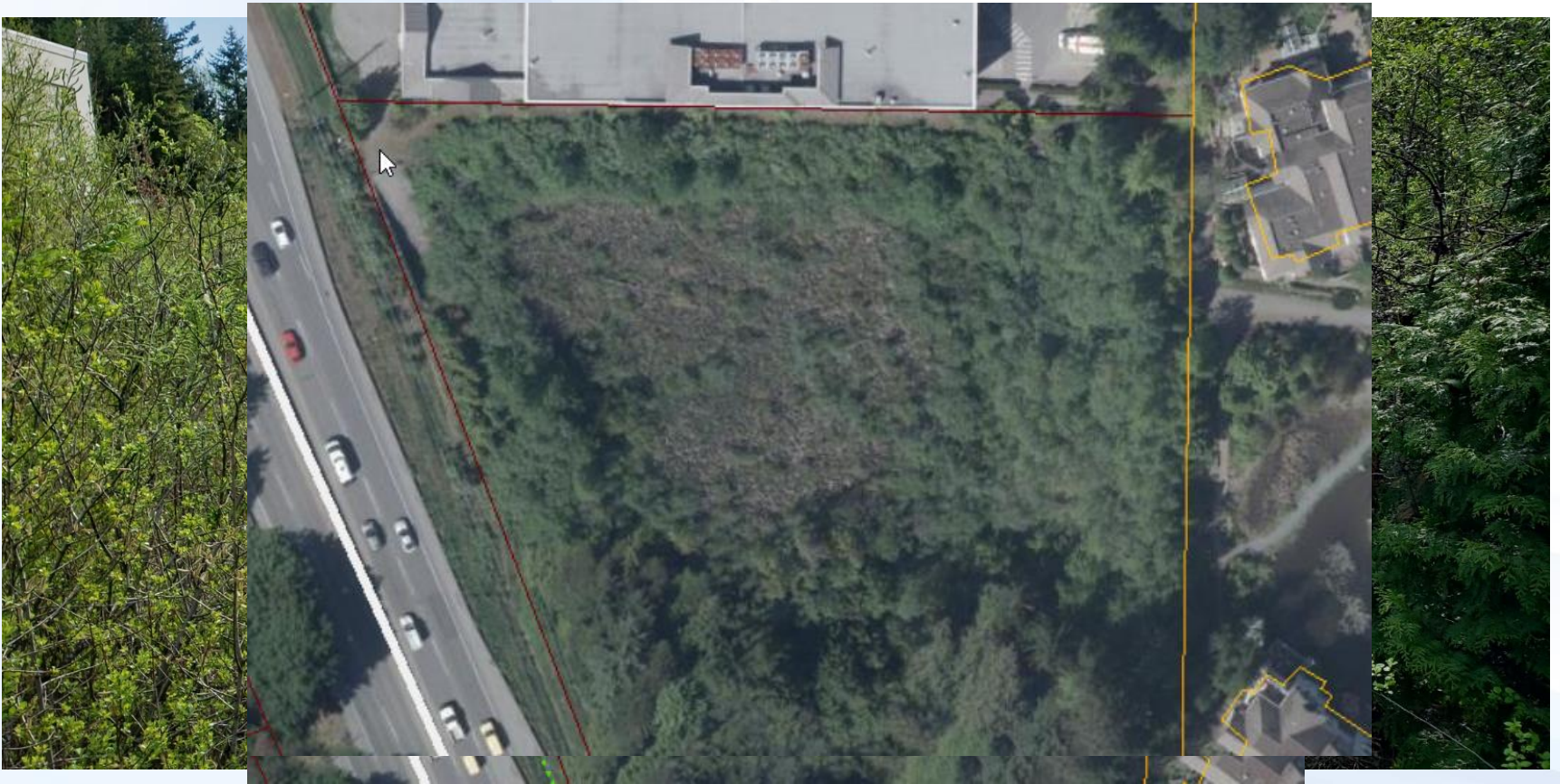
Overview of Policies and Guidelines

- OCP
- Stormwater Management in Nanaimo Guidelines
- Steep Slope Development Guidelines
- Stormwater Planning Guidebook
- ISMP's (Wexford & Walley)
- MoESS Section 7



Environment Management

Project Highlights Longwood Station



Environment Management

Stormwater Management

Project Highlights

Hawthorne Subdivision



Environment Management

Stormwater Management

Project Highlights

Inland Kenworth



Environment Management

Stormwater Management

Project Highlights

Greenrock Industrial Subdivision



Environment Management

Stormwater Management

Adoption of MoESS Section 7

November, 2016

- Capture, retain, infiltrate or reuse 6-Month, 24-hour rainfall (31mm +/-)
- Detain for areas that discharge into watercourses to minimize erosion
- Treatment to remove 90% of suspended particles
- Account for climate change



Environment Management

Stormwater Management

Project Highlights

Subdivision – 480 Tenth Street

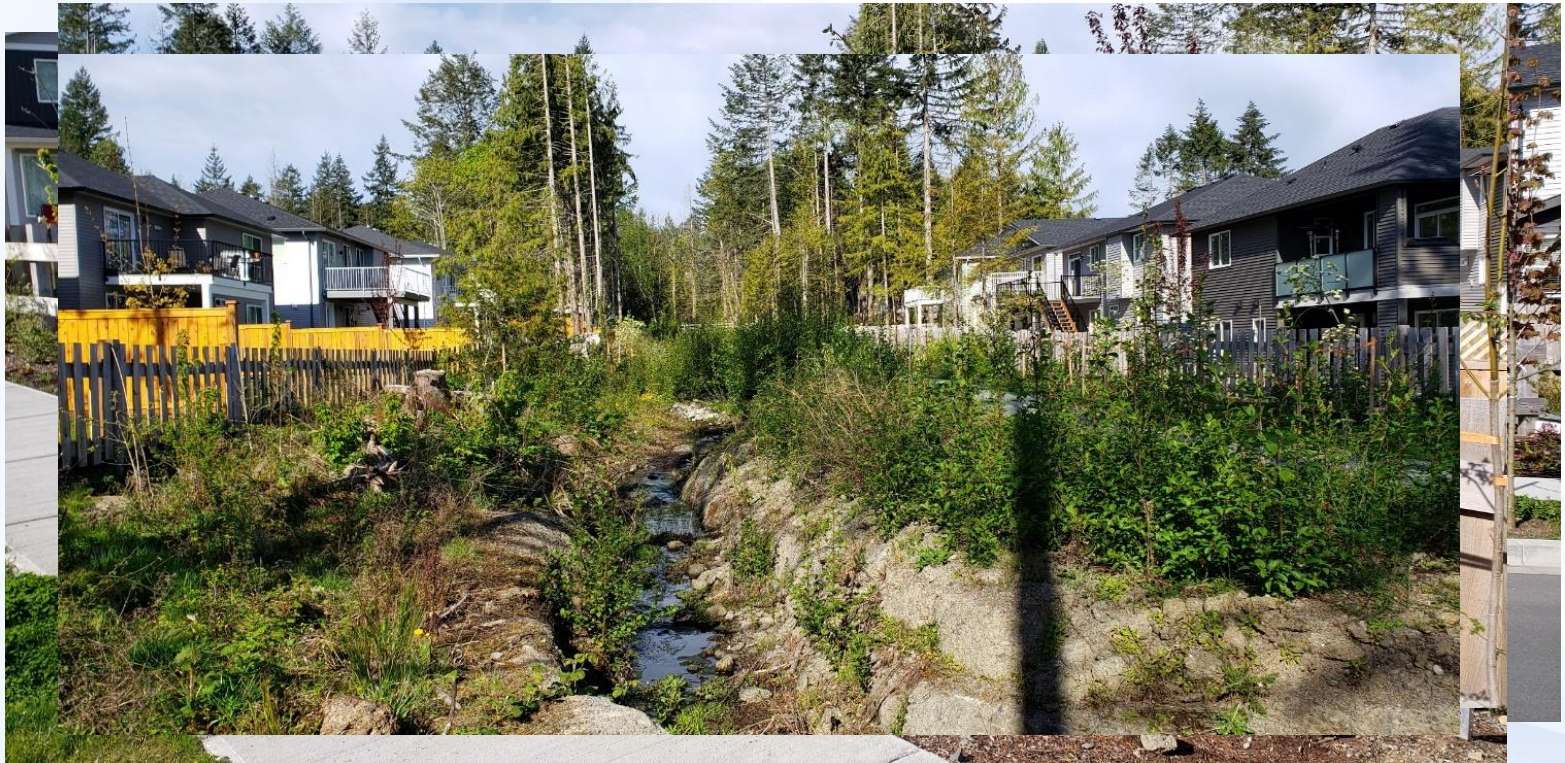


Environment Management

Stormwater Management

Project Highlights

Subdivision – 519 Ninth Street

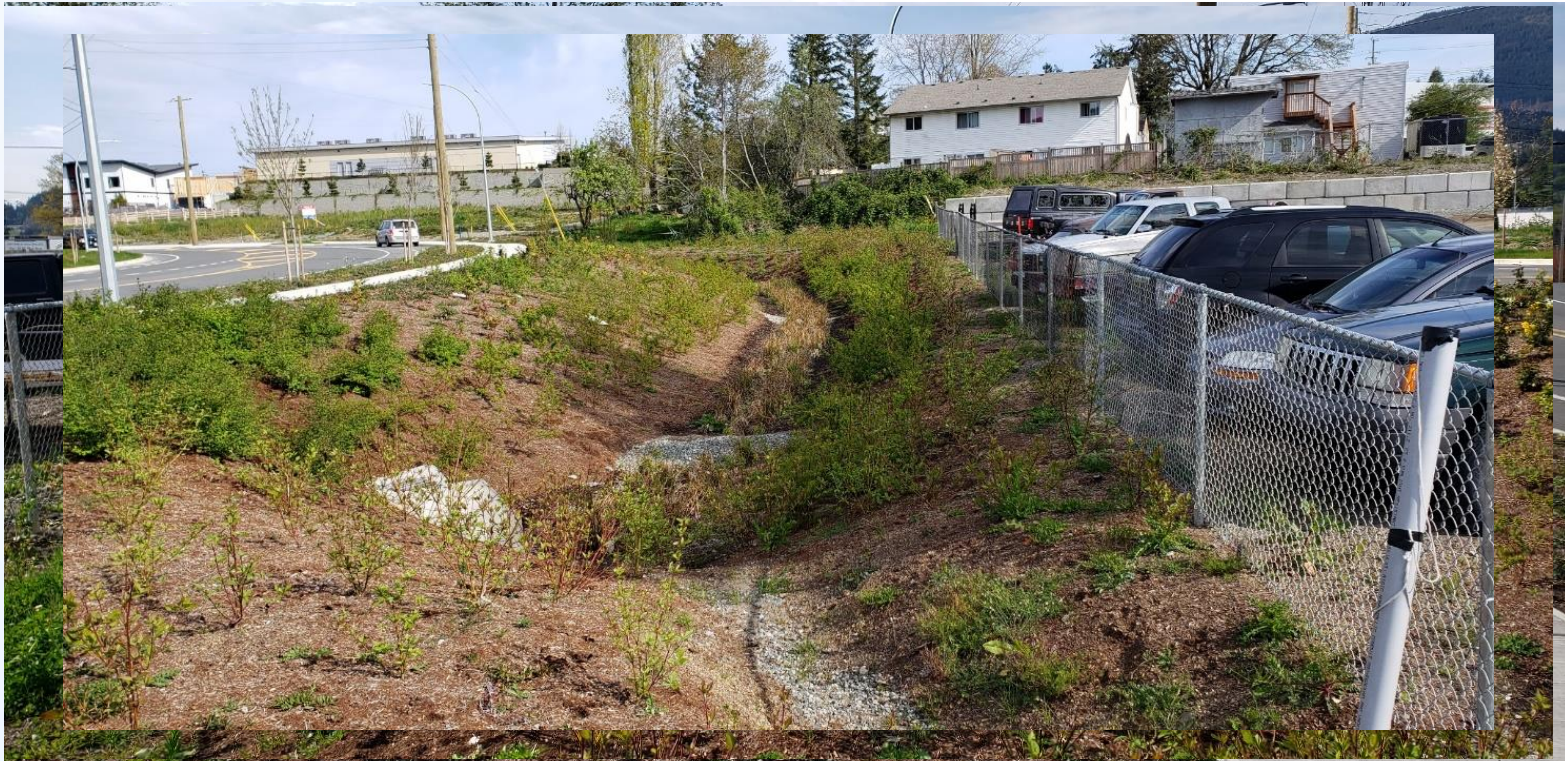


Environment Management

Stormwater Management

Project Highlights

Subdivision – Greenrock Phase 3



Environment Management

Stormwater Management

Project Highlights

Commercial Development - La-Z-Boy



Environment Management

Stormwater Management

Ongoing Collaboration & Implementation

- Continuing to refine development requirements
- Collaboration with Parks & Recreation and E&PW to identify opportunities
- Review and recommend bylaw amendments to Council



BREAK



Overview of Climate Action & Environmental Management in the City of Nanaimo *Part 2*

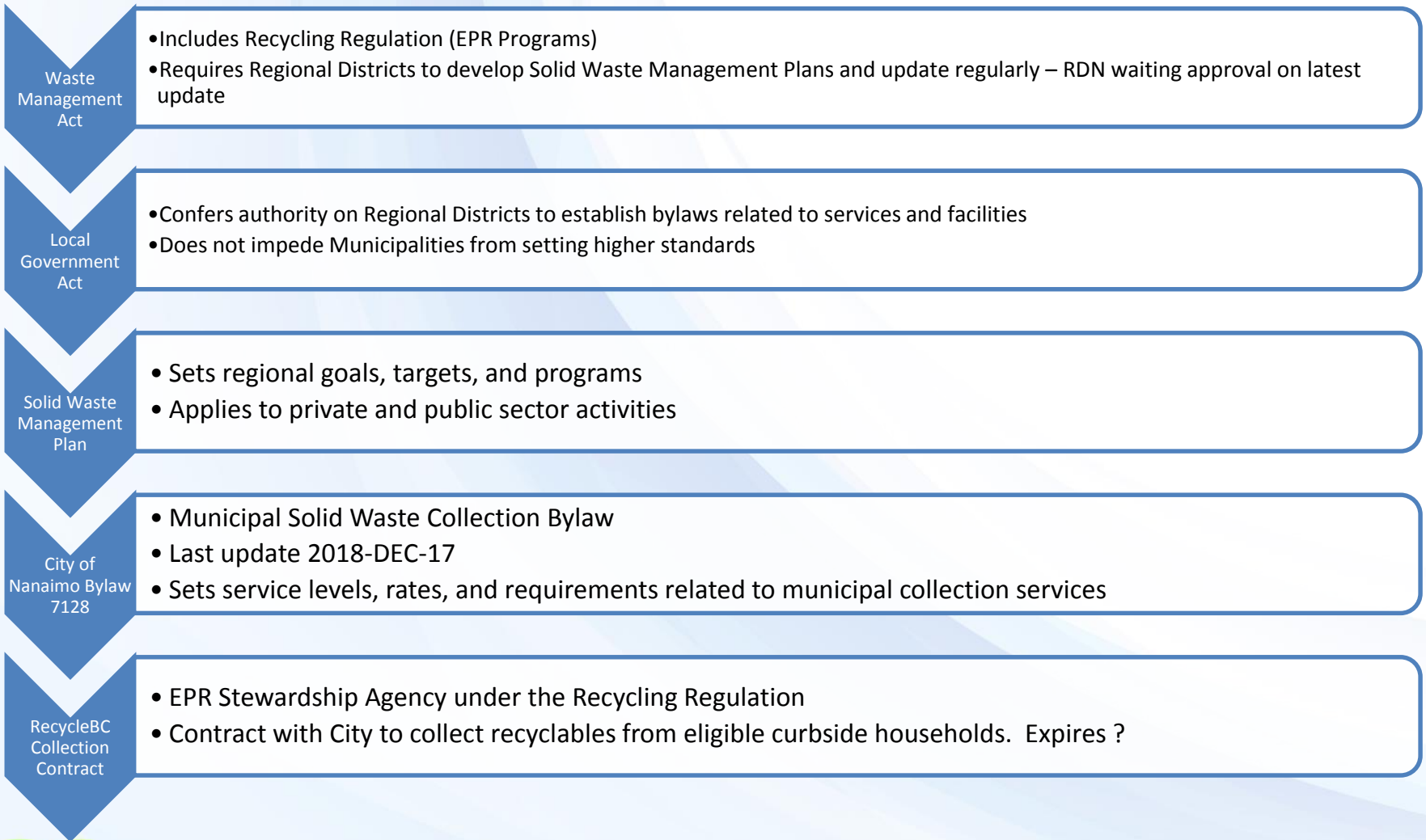


Sanitation & SortTossRoll Phase 2 Rollout

- Regulatory Framework
- Service Levels
- Automated Collection – Implementation Background
- Phase 2 Implementation – how did it go?
- The First 8 Months – Where we are at?
- 2018 Solid Waste Statistics
- Looking Forward



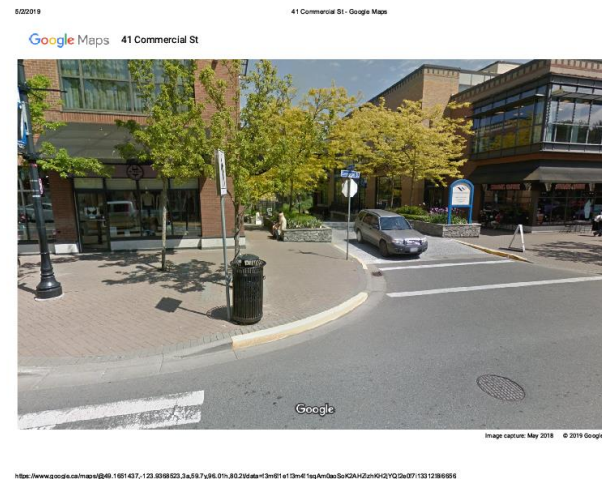
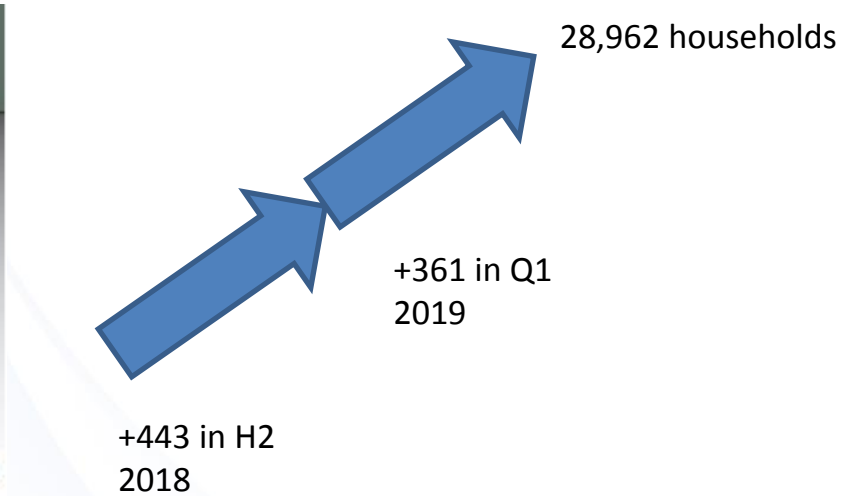
Regulatory Framework



Service Levels



Cart location and accessibility



100+ streetside receptacles -primarily downtown



Automated Collection - Implementation Background

- 3 goals
 - Improve Worker Safety
 - Increase Resident Convenience
 - Add Yard Waste Service
- Education began April 2017
 - Phase 1 transition – Oct 2017
 - Phase 2 transition – July 2018



The poster features a green and blue header with the 'SORT TOSS ROLL' logo. The main title 'Automated Residential WASTE COLLECTION' is prominently displayed. Below this, a black banner reads 'Your carts are being delivered!'. The central text states that homes in central Nanaimo will begin receiving automated collection services in late October. To the left, a circular inset shows three recycling bins (green, blue, and brown) with a green arrow pointing to them. To the right, a list of instructions tells residents to check their garbage calendar for changes and to look for a specific symbol on the calendar. A small image of a calendar is shown next to the instructions. At the bottom, the City of Nanaimo logo and 'NANAIMO RECYCLES' are on the left, and contact information (website, email, and phone numbers) is on the right.

SORT TOSS ROLL

Automated Residential WASTE COLLECTION

Your carts are being delivered!

Homes in central Nanaimo will begin receiving automated collection services in late October.

- Please check your garbage calendar that was recently mailed to you for changes to your collection schedule.
- Look for this symbol  on your calendar to indicate when you will begin using your new carts.

CITY OF NANAIMO
NANAIMO RECYCLES

www.nanaimo.ca/goto/SortTossRoll
SortTossRoll@nanaimo.ca
250.756.5390 or 250.758.5222



Phase 2 Implementation - How did it Go?

- All new trucks and carts were delivered on time
- 53,131 carts distributed over 6 weeks
- Transition of routes from manual to automated collection took place over 5 weeks. All routes automated by Aug. 5, 2018
- Successfully brought recycling collection in house



The First 8 Months - Where Are We?

- Program changes have been generally well received
 - Larger organics carts
 - Cleaner curbside presentation
- Discovering and addressing issues at the neighbourhood level
- Discussions with Planning & Engineering during development design phase to ensure new developments consider collection activity requirements – added design criteria to MOESS
- Carryout program - some residents no longer need service as carts can be easily wheeled. Currently have 114 carryouts – indicative of ageing population
- Technology (RFID, GPS, photos, App) has improved staff ability to address resident questions, re: contamination, accessibility, service interruptions
- 30% of households have downloaded the NanaimoRecycles App



Did We Achieve Our Goals?

Improve worker safety?

- ✓ Yes - Incident rate and lost time due to injuries after automated implementation decreased dramatically

Improve resident convenience?

- ✓ Yes – reduced self-haul trips to landfill

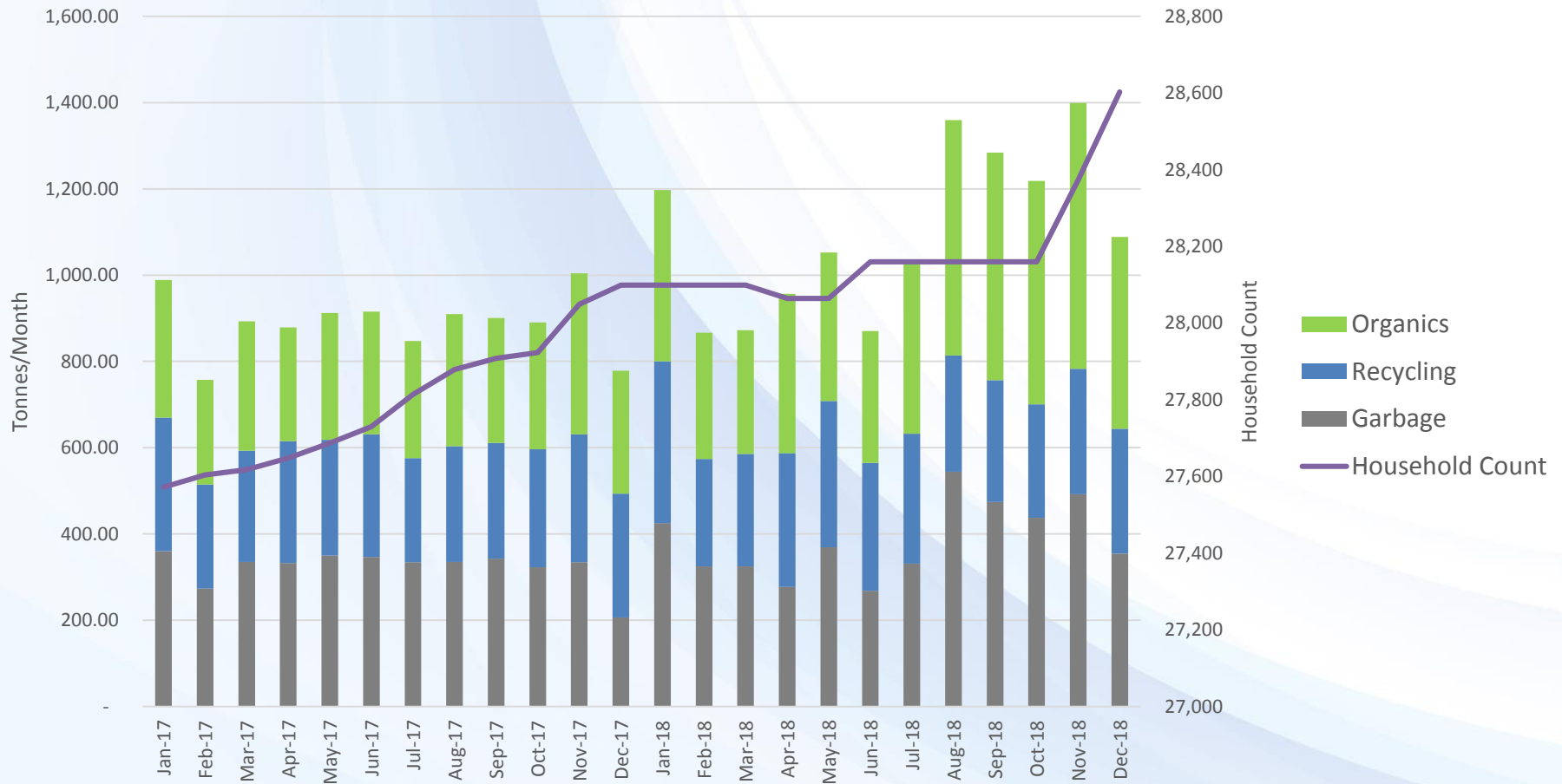
Add yard waste?

- ✓ Yes – increased curbside organics volume by 43%



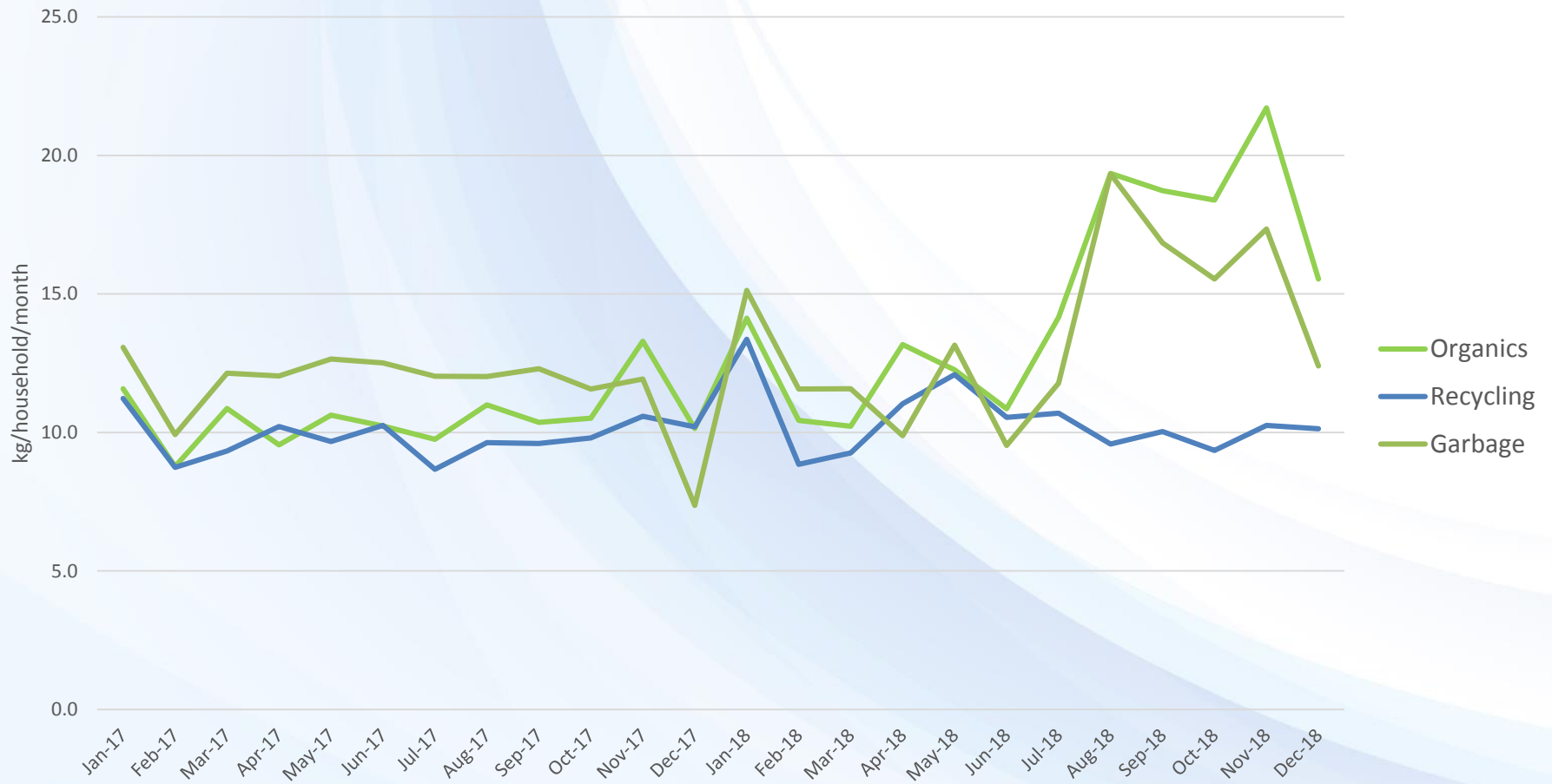
Solid Waste Statistics

Monthly Solid Waste Generation vs. Household Count



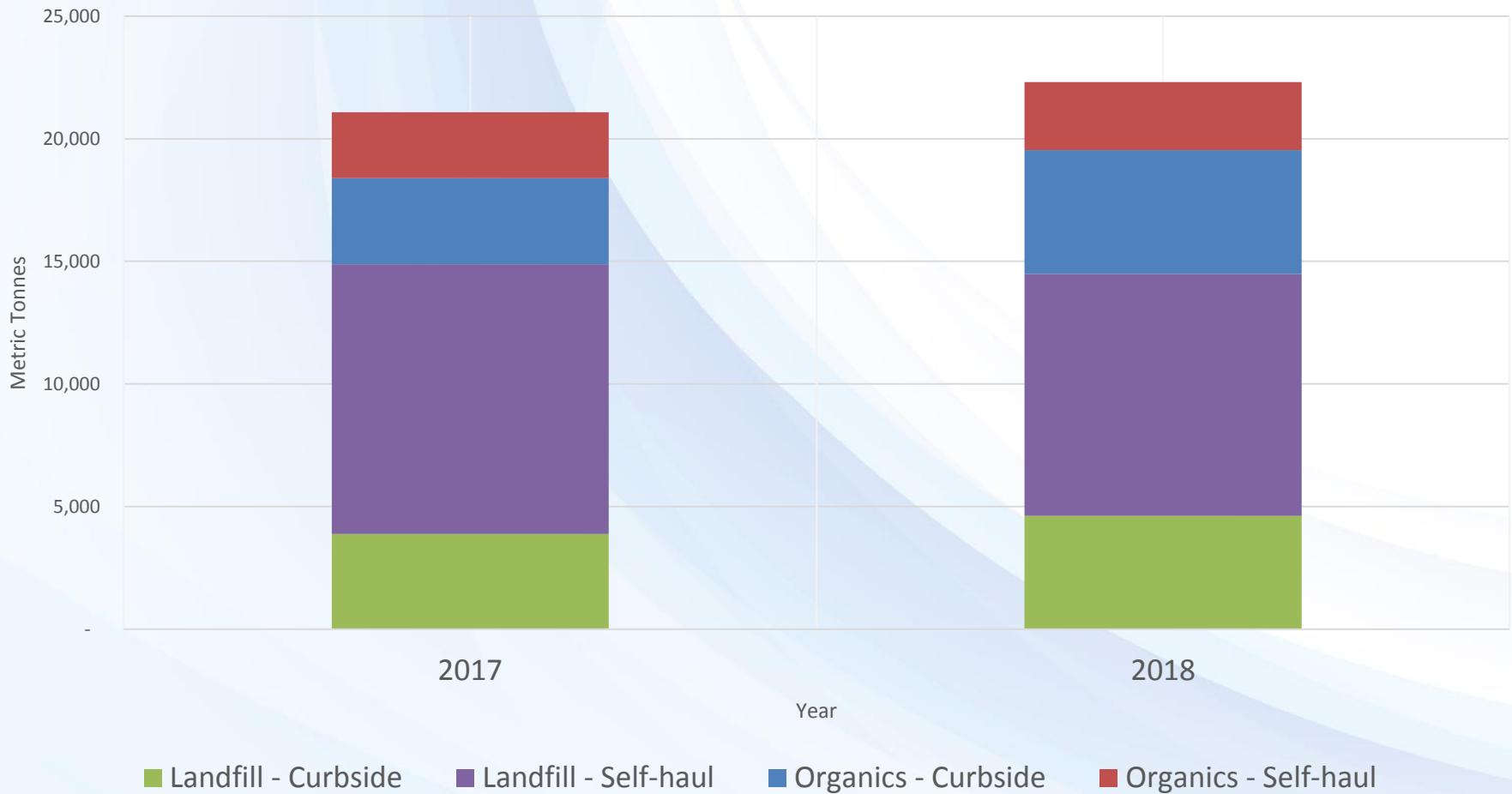
Solid Waste Statistics

Solid Waste Generation Rates



Solid Waste Statistics

Annual Volumes to RDN Facilities



Looking Forward

- New programs included in the RDN Solid Waste Management Plan – focus on waste reduction as well as increased diversion
- What's in the garbage? – waste composition study
- Promote use of the NanaimoRecycles App as a primary information source for residents
- Improve collection efficiency through routing optimization
- Continue citizen engagement education through hiring of Zero Waste Coordinator
- Monitor safety outcomes associated with automation implementation
- Plan for new resources as the City grows

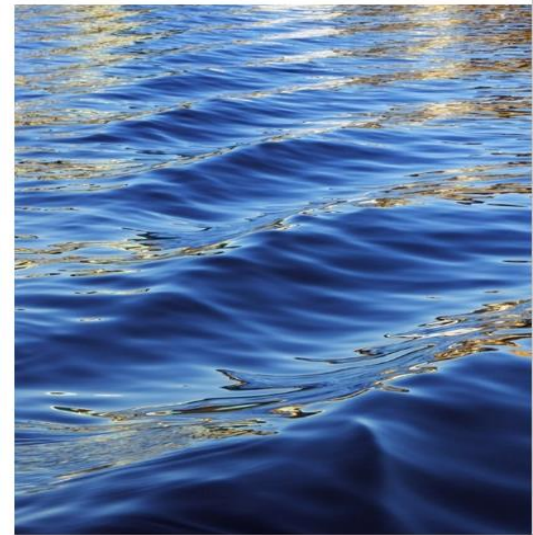


Fleet Operations



City of Nanaimo

Green Fleet



Nanaimo's Fleet

Fleet Services repairs and maintains over 400
vehicles and equipment

Compact cars to fire rescue equipment

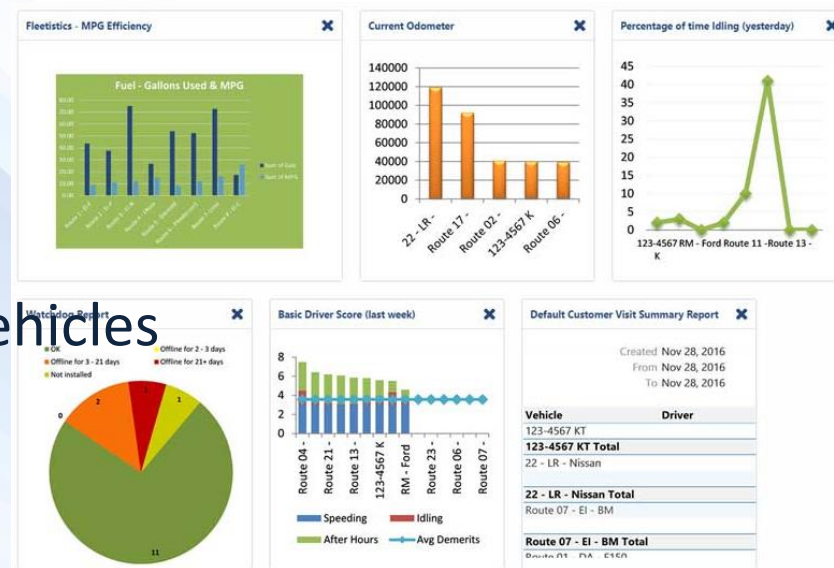


Fleet Greening

Fleet Greening is a comprehensive strategy to reduce emissions from the City's Fleet, through improved efficiency, and the development of green standards.

Greening the fleet includes:

- Driver behavior
- Rightsizing
- Utilization
- Maintenance of equipment
- Purchasing of zero emissions vehicles



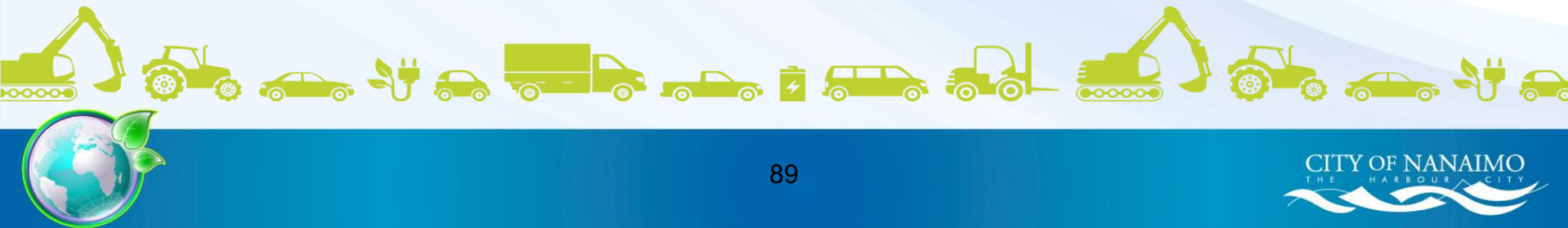
Why 'Green the Fleet'?

- Provincial mandate (cleanBC)
- Cost
- Health and air quality
- Response to Corporate Climate Change Plan



Initiatives to Date

- Installed automated fuel management system
- Implemented a preventive maintenance system
- Adopted a corporate anti-idling policy in 2007
- Implemented a pool car program in 2008
- Adopted bio-diesel 5 blend in 2009



Initiatives to Date

Alternative fuel vehicles

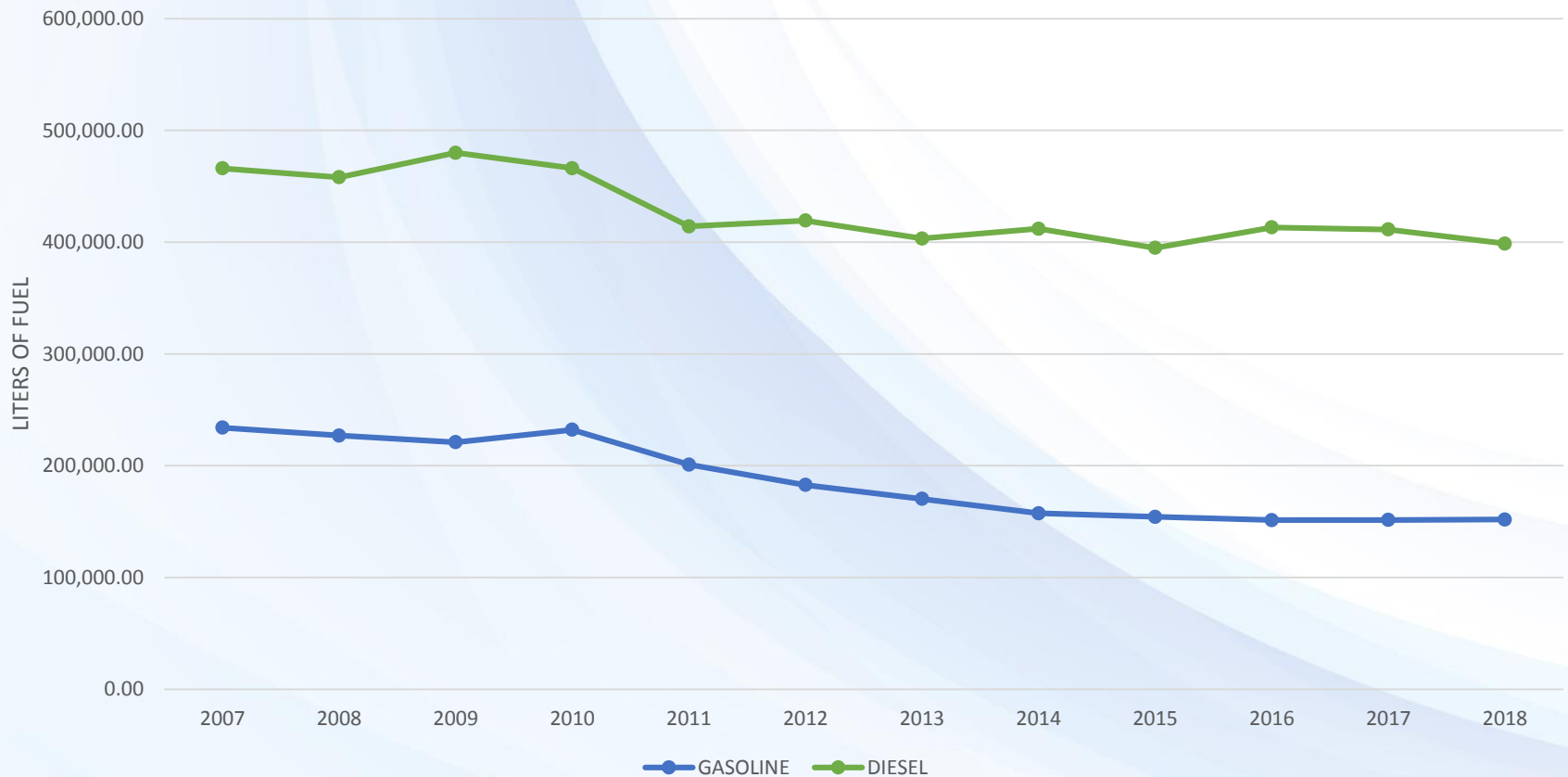
- 4 Hybrid
- 21 Propane / CNG pickup trucks
- 9 CNG garbage truck fleet
- 5 fully electric cars
- 5 fully electric ice resurfacing machines



17% Decrease in Diesel fuel used 2007-2018

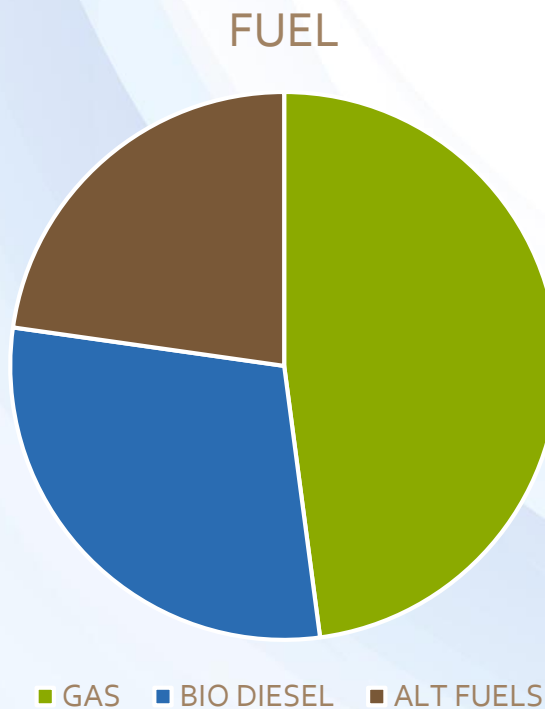
4% Decrease in gasoline used 2007-2018

10 YEAR DIESEL & GASOLINE USEAGE



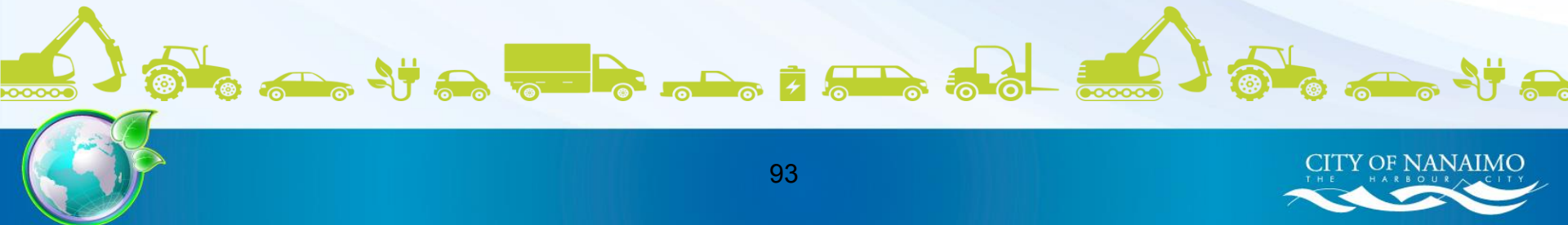
GREEN FLEET ACHIEVEMENTS

22% fleet using alternative fuels
29% fleet using Bio-Diesel



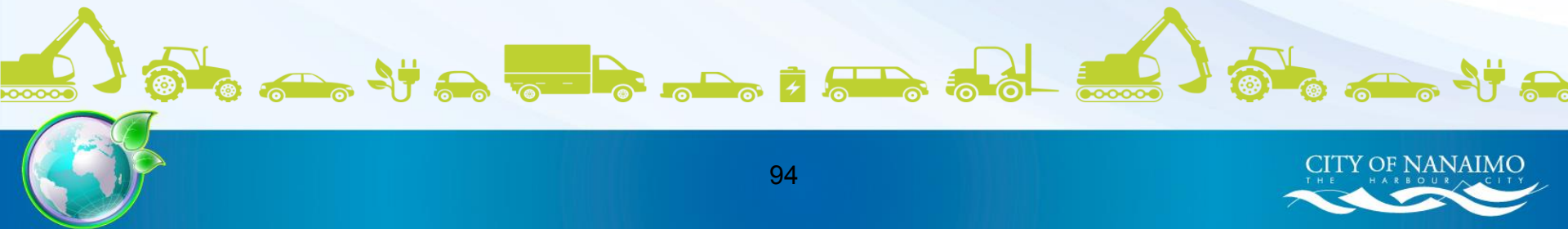
Current Initiatives

- Partnering with neighbouring municipalities to share best practices
- Right-sizing vehicles at time of purchase
- Annually evaluating the preventative maintenance program
- Provide fuel consumption reports to departments
- Assessing 10 year purchase of vehicles for potential alternative fuel vehicles
- Currently developing a Corporate Green Fleet Strategy



Future Goals

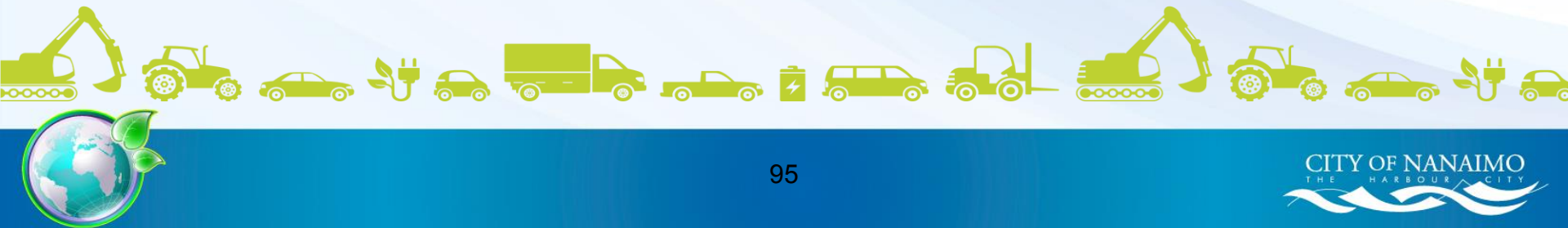
- Preparation of formal Fleet Strategy for Council
- Joining the E3 Fleet challenge program
- Complete a Corporate Green Fleet Strategy with data provided from E3 Fleet review



Our Call to Action

Council's declaration of a climate emergency propels the City's fleet to strive for further emissions reduction.

A Green Fleet Strategy demonstrates the City's leadership

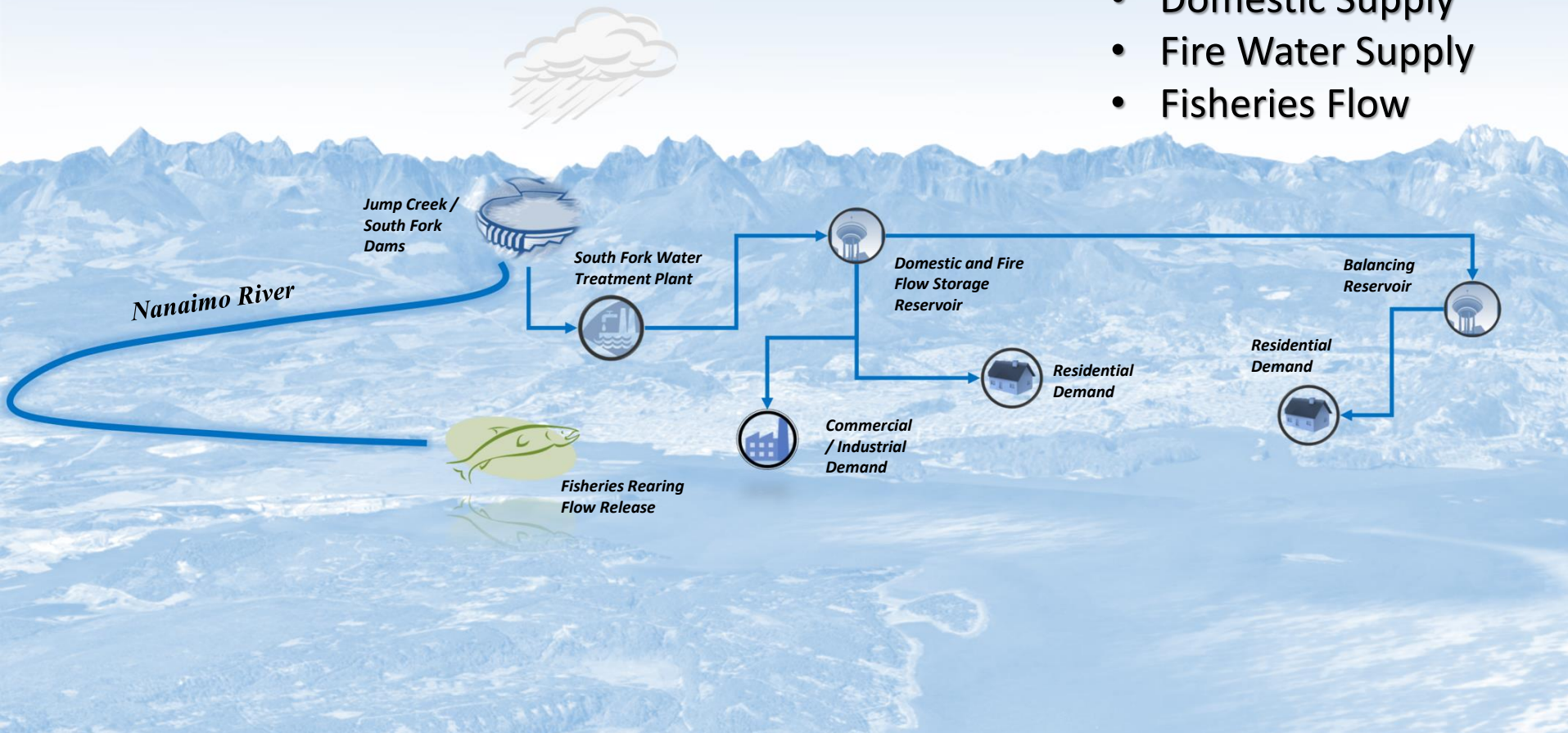


Water Resources



Water Resources

- Domestic Supply
- Fire Water Supply
- Fisheries Flow



- City of Nanaimo
- Snuneymuxw First Nation
- West Extension Water District

- Emergency / Temporary Supply:
- District of Lantzville
 - North Cedar Improvement District
 - Nanaimo Forest Products (Harmac)



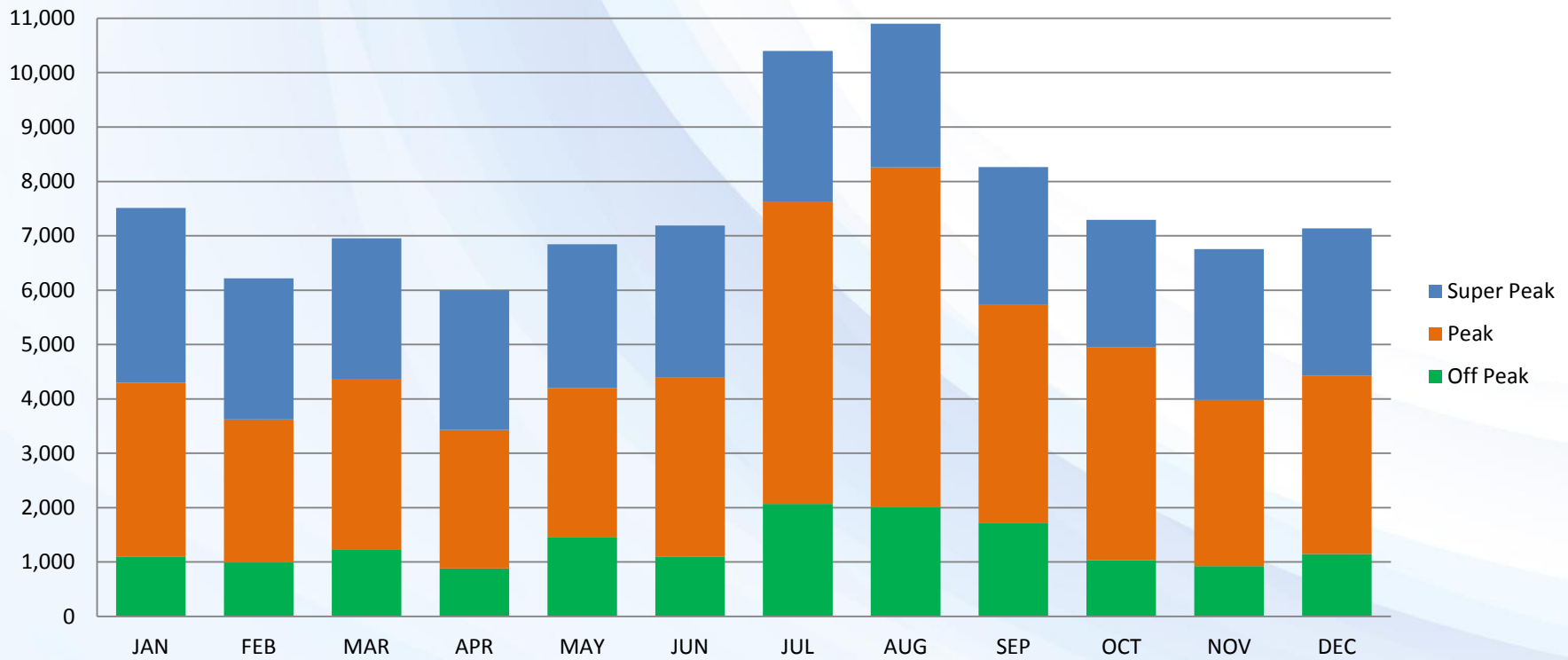
Energy Recovery Facility



Energy Recovery Facility

- In 2018 the Reservoir No. 1 Energy Recovery Facility generated an average of \$7,600 / month income for the City from electricity production care of BC Hydro, enough power for **60-70 residential homes** or \$91,450 for the year.

2018



Fisheries Release

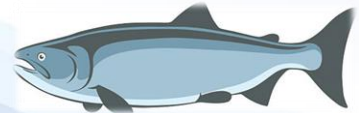
South Fork Dam – Fisheries Release:

- Min. Requirement below South Fork Dam:
0.28 m³/s (10 Olympic sized pools / day)
- Additional Requirement Downstream of the Nanaimo River Bridge (Above Nanaimo Forest Product's Water Intake),
Min. Flow: **3.9 m³/s** (138CFS)

Shared Allocations
between:



Nanaimo Forest Products 75 %
City of Nanaimo 25%



Water Conservation

How do we manage and encourage efficient water use?

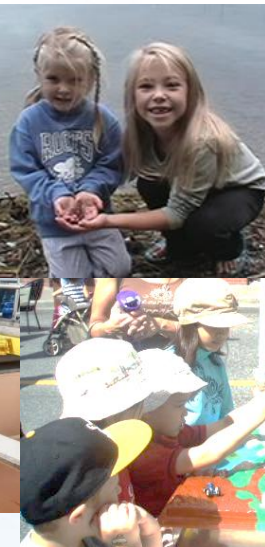
- Universal Water Metering (since 1983)
- Tired Billing Rate (more water use = more you pay)
- Full-cost pricing (since 1992)
- Water Audits
- Regulation of permitted uses and summer watering restrictions
- Annual user rate increases to ensure funding sustainable for major capital and ongoing operations (2007)
- Low-Flow Toilet Rebate Program / BC Hydro Rebates (since 2009)
- Computerized water system monitoring and operation (SCADA)
- 2008 Water Conservation Strategy (updated 2014)
- Instrumentation: Rainfall / Snow / River Flows
- RDN & *Team WaterSmart* partnership



Water Conservation

Public Education

- Partnering with the Regional District of Nanaimo Team WaterSmart program includes a Water-Wise Education component.
- School presentation tours in conjunction with Forestry companies



Residential Use - Water Demands

Total Residential
Daily Use
(liters per capita per day)

National Average

274



British Columbia Average

353



City of Nanaimo Average (2007 - 2012)

274

City of Nanaimo Average (last 5 years)

228



↓ - 10 %

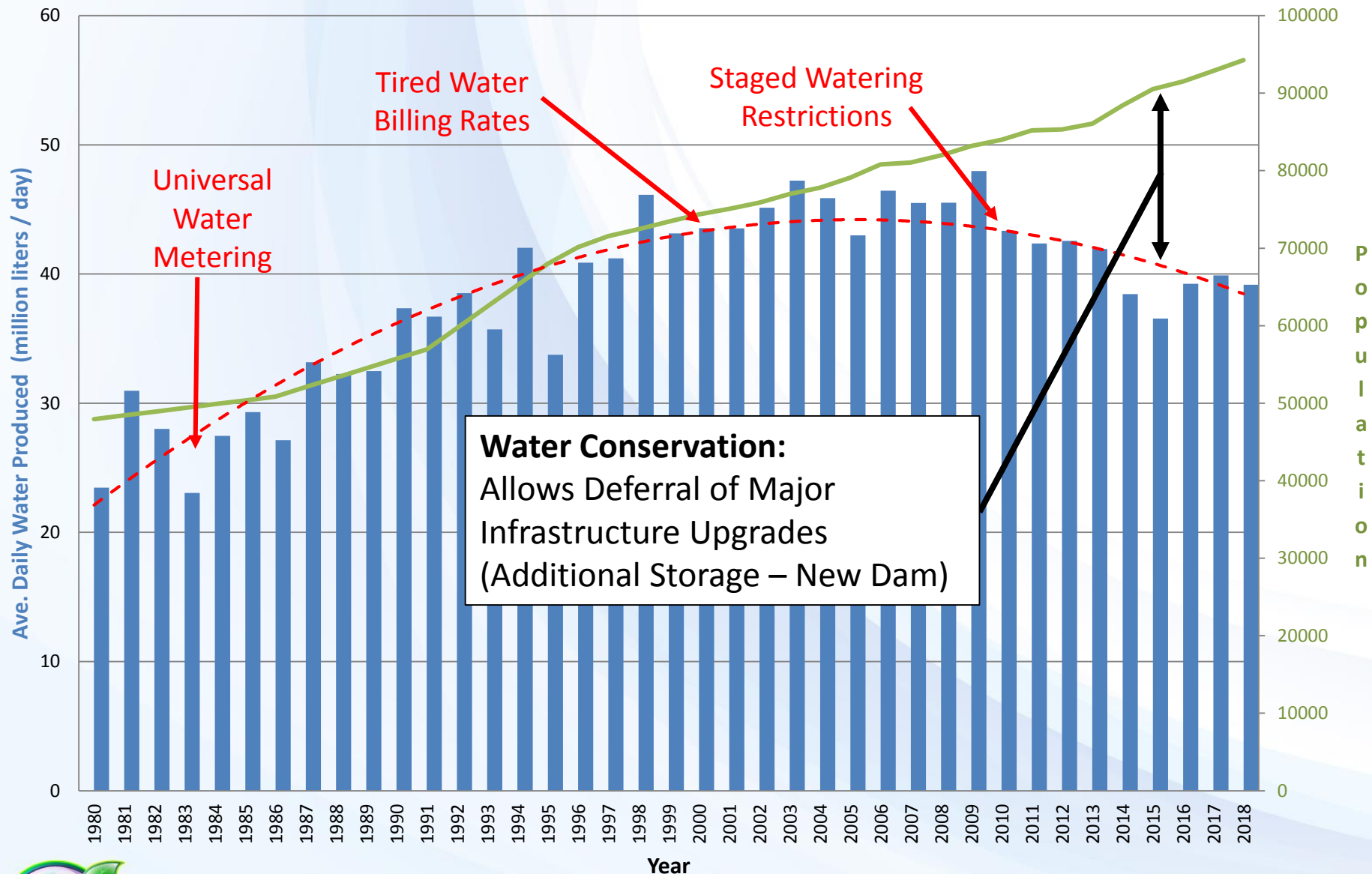
The updated 2014 Water
Conservation Strategy
Targets a 10 % reduction
over the next 10 years



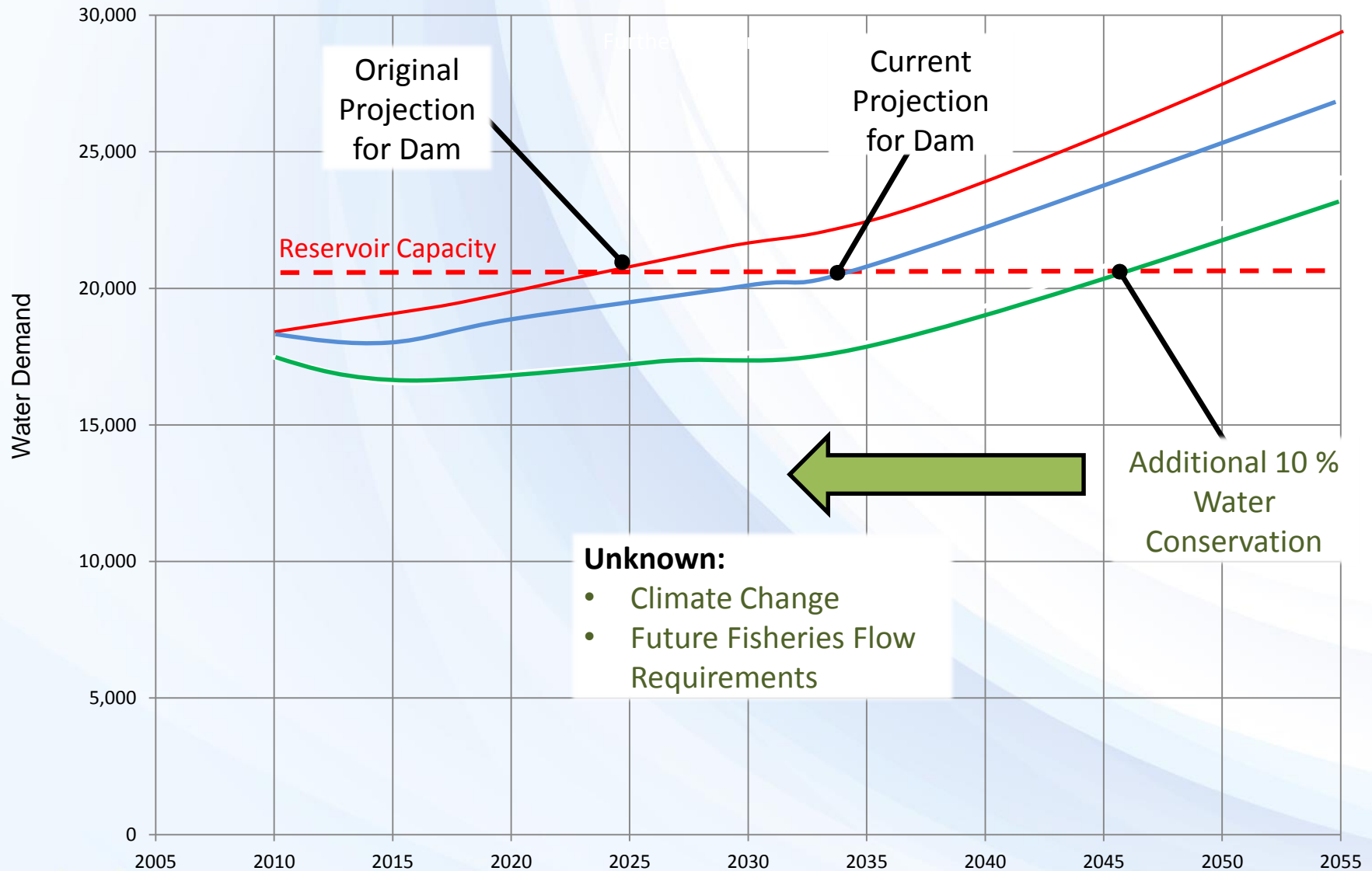
Source: Environment Canada – 2011 Municipal Water Report



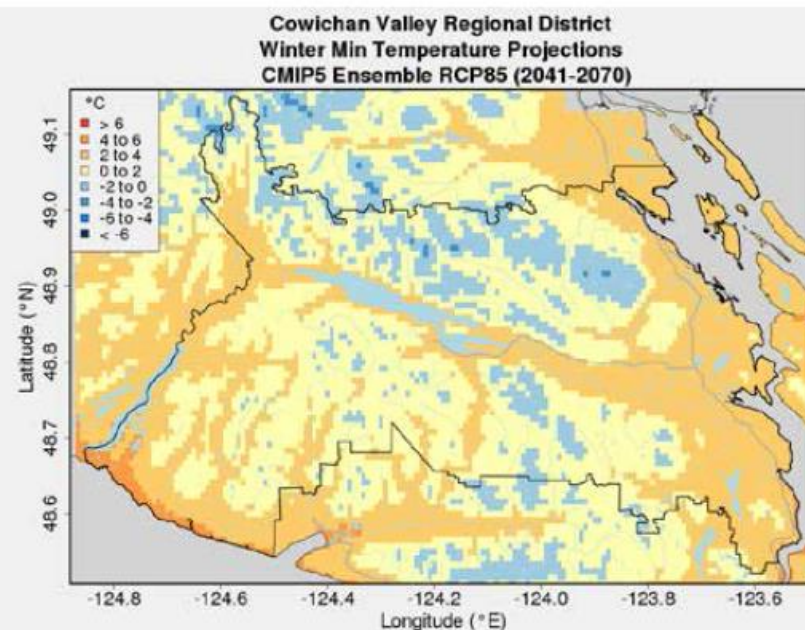
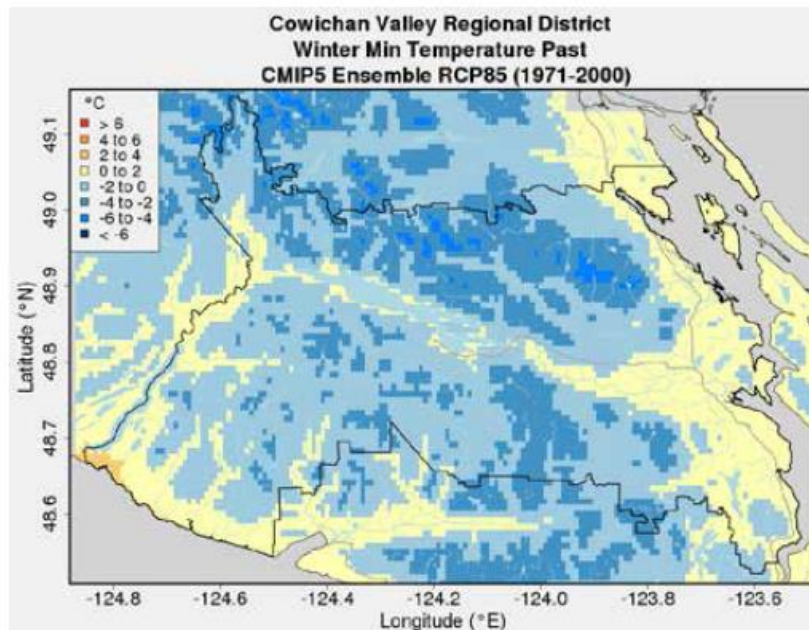
Demand Management



Future Expansion



Update Water Supply Strategic Plan



Blue = Below Freezing



Yellow / Orange = Above Freezing

- Predicted: Longer and Drier summers will result in higher domestic water volume demands and longer Fisheries Flow requirement in September through November.
- Additional regulatory requirement for building a new dam may require an increase to the Fisheries Flow Requirements



Water Resources





PARKS OPERATIONS

Parks Operations

Parkland in Nanaimo	
Owner	Hectares
City of Nanaimo	729
Province	317
Nature Trust of BC	133
Other	188
Total	1367

City Parkland by Zone	
Zone	Hectares
PRC - 1	
PRC - 2	
PRC - 3	



Ecosystem Types Found in Parks



Coastal Bluff (CB)



Woodland (WD)



Terrestrial Herbaceous (HT)



Older CDF Forest (OF)



Ecosystem Types Found in Parks



Wetlands (WT)



Riparian (RP)



Parks Operations

Examples of rare species found in Nanaimo Parks



Hocksackia pinnata
Bog bird's foot trefoil



Bidens amplissima
Vancouver Island Beggartick



Aster curtus
White-top aster



Parks Operations

Examples of rare species found in Nanaimo Parks



WPT_Buttertubs_June2017_KBarry.mp4

(Karen Barry and Eric Demers, 2017)



Chrysemys picta bellii
Western Painted Turtle



Parks Operations

Restoration Projects in Parks

Vancouver Island Beggarticks

- SARA listed species
- 59 sites in BC/
Washington
- Funding awarded through
Environment and Climate
Change Canada
- Reintroduced to Jingle
Pot (Third Street) Marsh
- Only site in Nanaimo
- 165 plants observed



Parks Operations

Restoration Projects in Parks

Bowen Park Side Channel

- In 2007, a major fish bypass channel was constructed from Deadman Falls upstream to a point above major fish barriers
- Side channel is 857 m long and contains significant fish habitat
- Ongoing partnership with Fisheries and Oceans and Vancouver Island University



Parks Operations

Restoration Projects in Parks

Knotweed / Hogweed Control

- Contract with Invasive Species Committee since 2015
- Education and Awareness
 - Coordinated between CISC and City
- Field Program (Sites Treated)
 - 140 Knotweed Sites
 - 7 Giant Hogweed Sites
- Data collected and posted to provincial database (IAPP)



Parks Operations

Conservation Partnerships

Buttertubs Marsh Conservation Area

- 55 Ha wetland complex currently co-managed by the Nature Trust of BC, Ducks Unlimited and the City of Nanaimo
- Ongoing environmental research and training by VIU in the West Marsh of Buttertubs
- Conservation Area Management Plan adopted by Council in 2016



Parks Operations

Municipal Natural Capital Initiative: Buttertubs Marsh Pilot Study



Making Nature Count

Buttertubs Marsh Conservation Area is a 55 HA reclaimed wetland/floodplain

Site and natural assets: Entire marsh under consideration including adjacent forest.

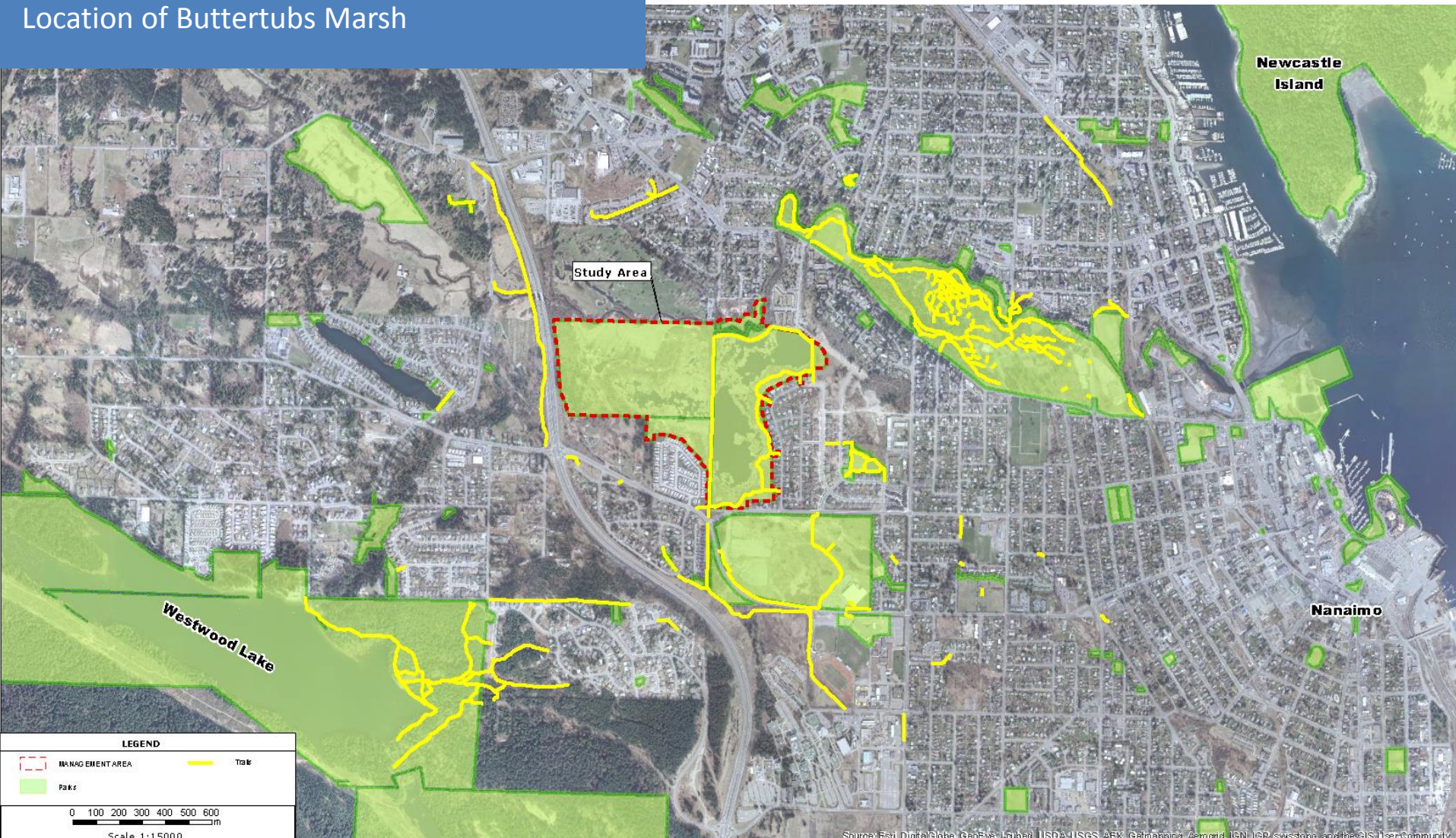
Emerging project model: Determine role marsh plays in mitigating localized flooding and increasing storm events; determine value of the Marsh in attenuating downstream flooding on the Millstone.

Possible outcome: developing an marsh restoration and maintenance plan built around an asset management approach.



Parks Operations

Municipal Natural Capital Initiative: Location of Buttertubs Marsh



Parks Operations

Municipal Natural Capital Initiative: Buttertubs Marsh Pilot Study

Estimated storage volumes and equivalent engineered costs to reproduce what Buttertubs Marsh does naturally

West Marsh						East Marsh				
	Surface Area at Max Level (m2)	Starting Water Level (m)	Storage Volume (m3)	Cost at \$150 per m3	Cost at \$150 per m3	Surface Area at Max Level (m2)	Starting Water Level (m)	Max Water Level (m2)	Storage Volume (m3)	Cost at \$150 per m3
Historic 100 year	85,560	56.79	57.01	18,230	\$2,734,540	145,167	57.16	57.25	13,065	\$1,959,755
Climate Change (median)	85,560	56.79	57.09	24,859	\$3,728,919	145,167	57.16	57.29	18,872	\$2,830,757
Climate Change (90th)	85,560	56.79	57.17	31,489	\$4,723,297	145,167	57.16	57.32	23,227	\$3,484,008

Replacement Cost of Butterubs Marsh (not including cost of land):

Historic 100 year flood – 4.7million

with climate change factored in – 8.3 million



Parks Operations

Municipal Natural Capital Initiative: Buttertubs Marsh Pilot Study

Next Steps:

Prepare a report to Council on the Pilot Study and make recommendations on next steps, including:

- A funding request to complete a natural asset inventory of our low lying / wetland areas that could be incorporated into the City storm and flood control infrastructure.
- Seek Council support to determine how the City could incorporate natural assets into our financial and asset planning.



Parks Operations

Partners In Parks Program (PIP)

- The Volunteers in the Park Program (VIP) was initiated by the City in 1982.
- Since then it has been renamed Partners in Parks Program (PIP) and grown to include:
 - Neighbourhood Playground Development
 - Community Gardens
 - Park Beautification and Tree Planting
 - Gatekeepers & Park Naturalists
 - Public Art
 - Invasive Plant Removal Work parties
 - Park Ambassadors
 - Adopt-A-Park Program
 - Eco Club/School Group Ecological Stewardship Projects (invasive plant removal, restoration, monitoring)



Parks Operations

Park Ambassador Program

Currently we have 18 individual volunteers who visit over 20 of our local parks and trails on a regular basis as part of our Park Ambassador Program.

They are involved in invasive plant and garbage removal in the park and provide information and education to park users.

They also help to maintain a personal level of service in our parks, trails and open spaces by their presence and in reporting park or trail issues to the Parks Operations Department.



Parks Operations

Broom Busters Partnership (2014 – 2019)

- 60 Volunteers involved in cutting flowering broom
- City coordinates broom chipping and disposal at the end of the season
- Broom cut on:
 - 33 City Parks
 - Over 50 sections of City road right of way
 - 8 Elementary Schools
 - 18 Commercial Properties



Parks Operations

Student Ecological Stewardship Program

Examples of Student Ecological Stewardship Projects:

- Plant Identification – native and invasive
- Removal of ladder fuel (forest fire hazards)
- Plant Mapping (Barefoot Mapping)
- Invasive Plant Removal
- Restoration - replanting & watering of new native plants
- Student Partnerships with NS3 and the Great Shoreline Clean Up Initiative ie. Trash to Treasures
- Involvement in the **Adopt-a-Park Program** – ongoing stewardship in one particular park



Departure Bay Elementary School & Stream Keepers



**Restoration in
Woodstream Park in 2016**



Departure Bay Elementary School & Stream Keepers

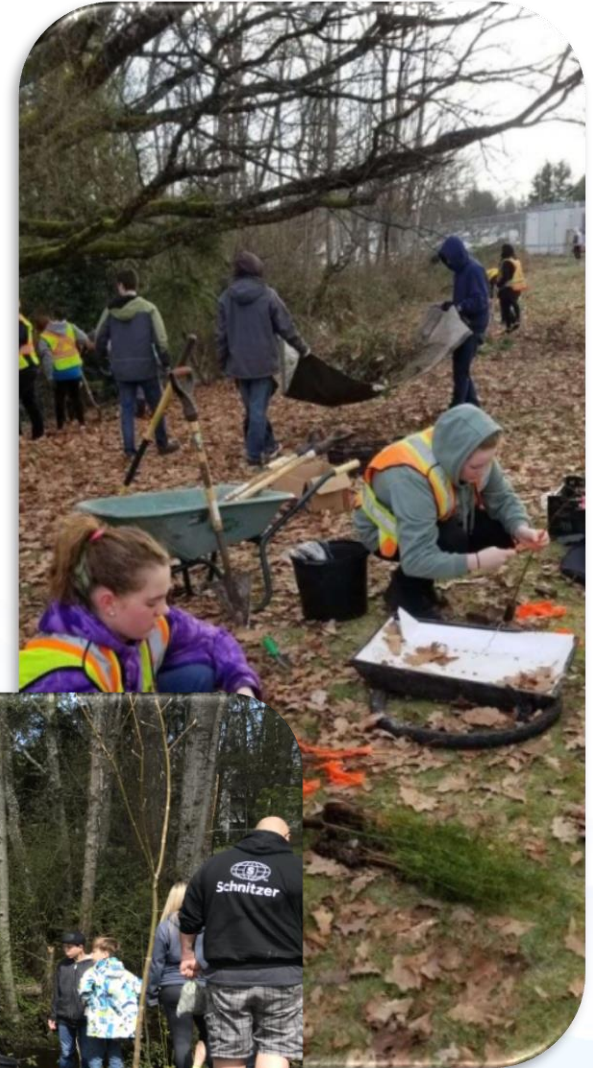


Departure Creek Realignment and Enhancement Project in 2018



MyCDC & John Barsby School

Chase River Restoration Project



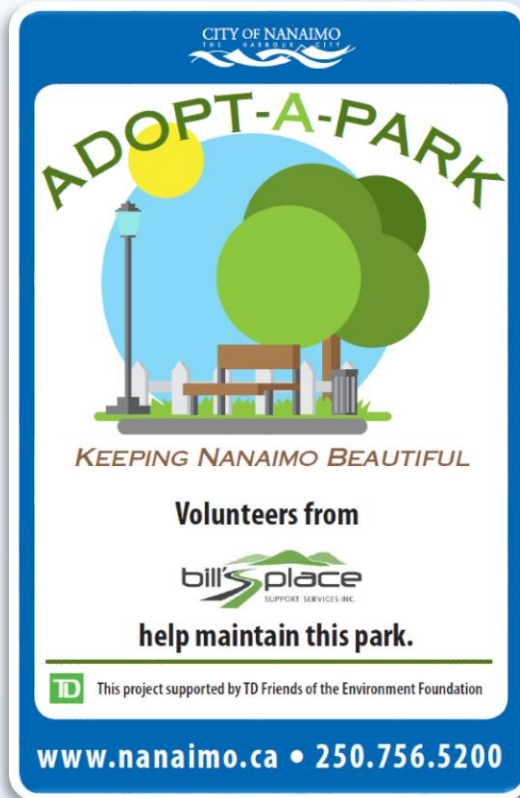
Dover Bay Secondary School Eco Club



Community Work Parties



Parks Operations Program Recognition



Parks Operations

Adopt-a-Park Program

- Supported and funded by **TD Friends of the Environment Foundation Funding**,
- Training and tools provided by City
- This program open to non-profit community groups, corporate or private business groups, neighbourhood groups, social clubs or school groups.
- Responsibilities may including but not limited to:
 - litter pick up,
 - graffiti removal,
 - invasive plant removal,
 - native plant restoration,
 - tree planting,



Bill's Place, Pipers Lagoon



TD Bank, Bowen Park



Before



After



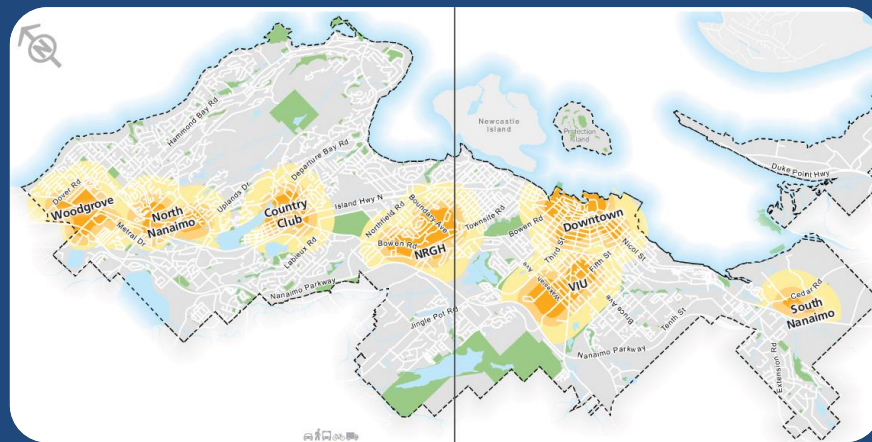
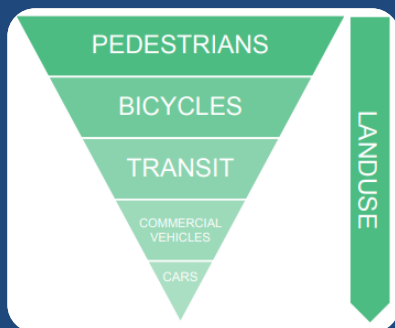
Elliot Sigmundson showing everyone just how it's done!




Ian Sigmundson and Erich Belanger hauling out yet another load of debris



Transportation Strategies to Support Sustainability



Shorter trips = less driving


14km
/person
/day


10km
/person
/day

*Fewer driving trips
per capita over
shorter distances will
help reduce traffic
growth in the future.*

Climate Action Update

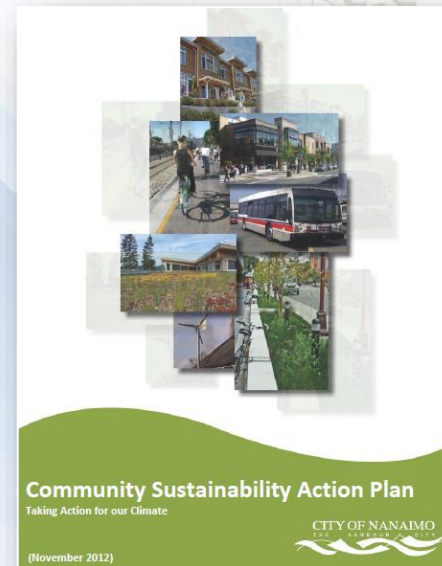
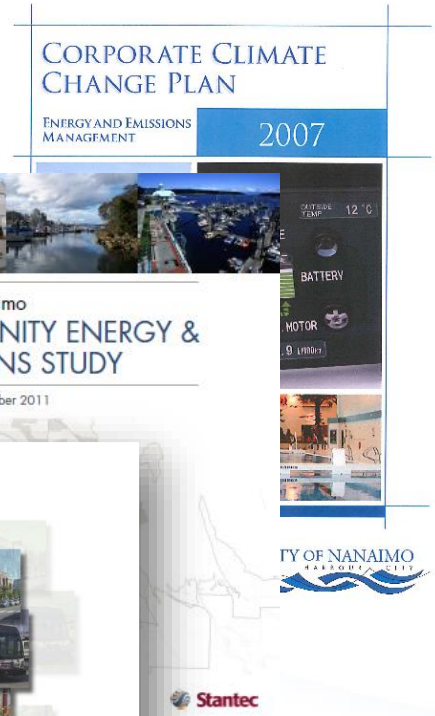
1. Corporate Energy and Emissions Management
2. Community Energy and Emissions Management
3. Climate Resiliency Strategy



Climate Action Update

Policy Development

- Corporate Climate Action Plan (2007)
- Community Sustainability Action Plan (2012)
 - Energy Conservation and Management Policy
 - Purchasing Policy – Green Purchasing
 - Green Building Strategy
 - Anti-Idling Policy



Climate Action Update

Corporate vs. Community GHGs

Corporate Emissions



Objective:
Carbon neutral
operations since 2010
(Climate Action Charter)

Community Emissions

Objective:
Community in OCP
(LG Act, Bill 27 – 2008)



Corporate Energy and Emissions

Our role

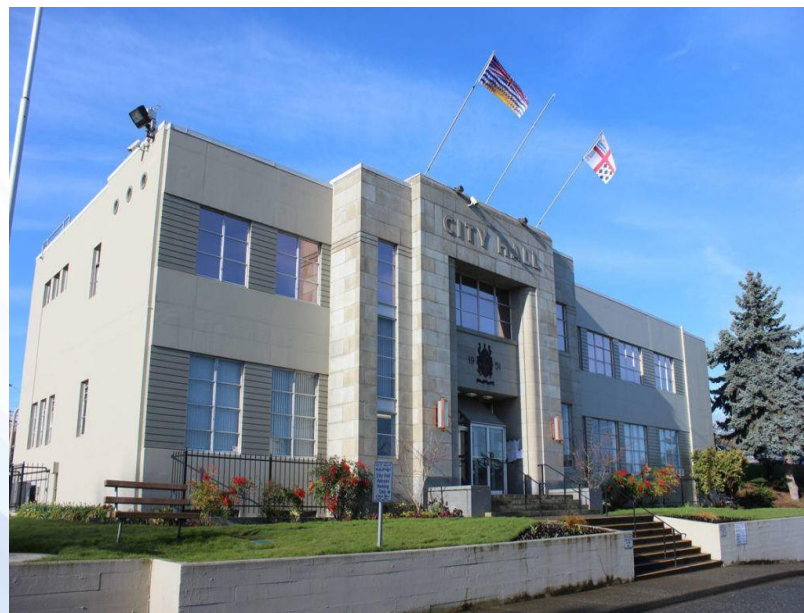
Analyze & plan how energy is used

Opportunities:

- New technologies
- Offset utility rate increases
- Reduce emissions and climate change
- Lead by example

Aligns with:

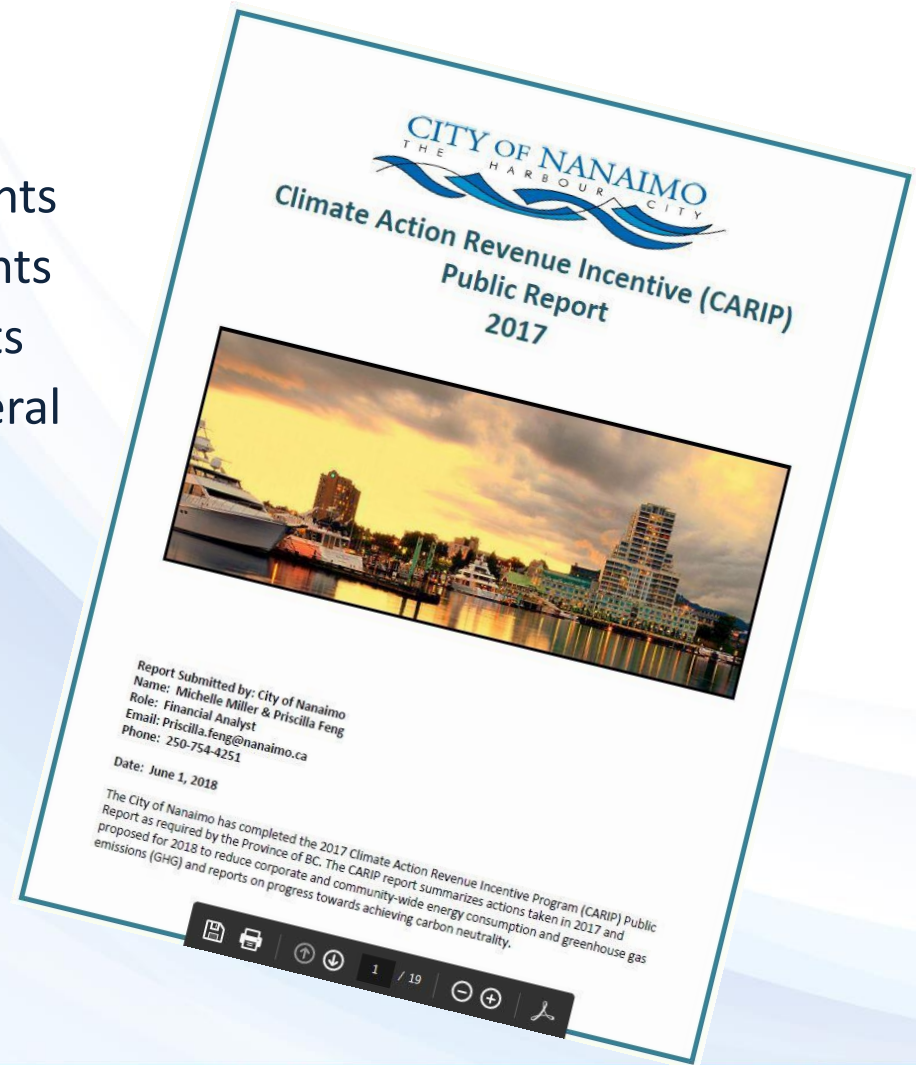
- Upgrading & renewal of infrastructure
- Goals & targets (SEMP)
- CleanBC Plan



Corporate Energy and Emissions

What we are doing

- Partnerships / Programs / Agreements
- Collaboration with other departments
- Incorporating efficiency into projects
- Funding from Sustainability or General Capital Reserves
- Sharing Results
- Climate Action Revenue Incentive Reporting (CARIP)



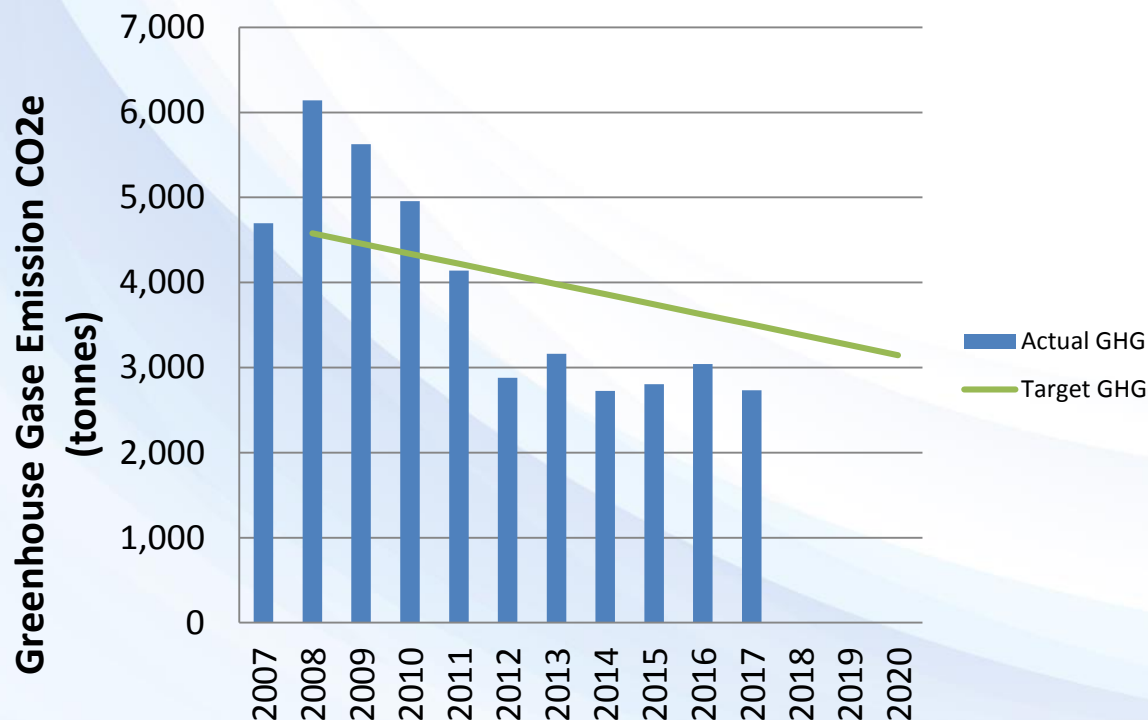
Corporate Energy and Emissions

How are we doing?

- Targets, monitoring, reporting
- Low-hanging fruit
- Program Changes
 - Conservation
 - Low Carbon Electrification

Over the past 10 years

- Reduced emissions by 42%
- Received \$1.93M in incentives
- Annual Energy & Cost Savings \$ 1.1M



Corporate Energy and Emissions

Plans moving forward

Update :

- Energy Conservation and Management Policy
- 2007 Corporate Climate Change Plan (Energy and Emissions Mgt.)

Continue to develop:

- Low Carbon Electrification – Feasibility and benefits of Retrofits and New Construction Projects
- Fleet Electrification – BC Hydro Study Funding – Charging infrastructure and vehicle options
- Explore and implement new technologies and alternative energy options



Community Energy and Emissions

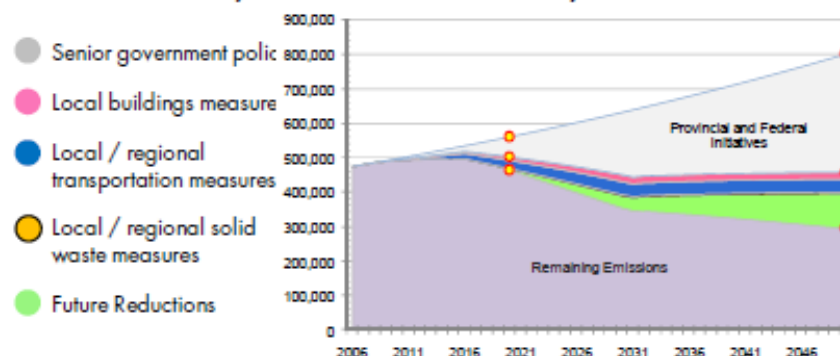
OCP+ Plus Scenario

Nanaimo CEES

OCP+ Plus Scenario



Summary of GHG reductions by sector



Key features of the OCP+ Plus scenario

- New growth largely focused in urban nodes, though some continues to occur throughout the city;
- Alternative transportation network grows and transit service improvements occur;
- TDM program implemented;
- Outreach campaign to promote idling reduction;
- Outreach campaign, coupled with incentives, to encourage energy efficiency improvements and alternative energy systems in buildings;
- One district energy system is implemented;
- Waste diversion continues to increase



Community Energy and Emissions

Actions Taken to Date

Theme	Strategies	Examples
Land Use and Transportation	<ul style="list-style-type: none">• Compact, Complete Community• Alternative and Active Transportation• Low Carbon Mobility	<ul style="list-style-type: none">• Urban Containment Boundary• OCP• EV Charging• Fleet Greening
Buildings	<ul style="list-style-type: none">• Energy Efficient Existing Buildings• Energy Efficient New Buildings	<ul style="list-style-type: none">• Realtor Energy Efficiency Program• Realtor Energy Efficiency Rebate• BC Energy Step Code
Solid Waste	<ul style="list-style-type: none">• Composting / Zero Waste	



Community Energy and Emissions

Making Choices on Further Action

Policy Tool	Potential Impact	Description
Education and Outreach	Low ~ 0 – 10% uptake	<ul style="list-style-type: none">• Low effort, low cost, low result• BUT foundations for other actions (Still necessary!)
Non-financial incentives	Low to Medium ~ 10 to 50% uptake	<ul style="list-style-type: none">• Infrastructure / amenities to encourage action
Financial Incentives	Medium ~ 50 to 75% uptake	<ul style="list-style-type: none">• Rebates, pricing, tax incentives• Higher cost, higher impact
Regulation	High ~ 75 to 100% uptake	<ul style="list-style-type: none">• Requirements that are often enforced (i.e. Bylaws)• High impact



Climate Action Update

Climate Resiliency Strategy

Two parts:

- Sea Level Rise Mapping Study (**Dec 2018**)
 - Determines the extent of impacts of sea level rise and storm surge for 2050 and 2100 along the City's shoreline
- Climate Resiliency Strategy (**Dec 2019**)
 - To identify risks and vulnerabilities affecting city land use, infrastructure, parks, public health and safety. Provide direction to help minimize or avoid the identified risks and vulnerabilities.



Conclusion



Spheres of Influence

